April 1957

LWAY TRACK and STRUCTURES

A Simmons-Boardman Publication

To reduce maintenance costs

—install

NATIONAL

RAILWAY SPRING WASHERS

KEEP BOLTS TIGHT

—longer!

The reserve power that is built into the NATIONAL line of powerful, railway spring washers keeps rails and joints tight over long periods under the most gruelling pounding. They absorb shocks, protect rail ends and joints, maintain constant bolt tensions . . . reduce maintenance costs.

A COMPLETE LINE
OF RAILWAY SPRING WASHERS

The NATIONAL LOCK WASHER COMPANY

Serving Industry Since 1886 — NEWARK 5, NEW JERSEY, U. S. A.

PROVEN on the job!

The Kershaw Ballast Regulator, Scarifier and Plow has been tested and PROVEN on the job by a vast majority of America's railroads . . . 80% of the Class I railroads in this country now own at least one Kershaw Ballast Regulator . . . Most own many more Regulators . . . One railroad has as many as 42.

There's no risk involved in buying a Kershaw Ballast Regulator . . . Try it on your railroad operating under your track conditions BEFORE you buy . . . See for yourself how the Ballast Regulator and its attachments can perform upward of 20 jobs at tremendous savings.

80%

OF THE CLASS ONE RAILROADS

in the United States

now owns at LEAST One

Kershaw Ballast Regulator!

THE KERSHAW

- **Ballast Regulator**

Road Crossing Scarifier, Rotary Brush Assembly, Reversible Wings and Snow Plow attachments now available for most Kershaw Ballast Regulators.

Now . . . more than ever . . .

Recognize This Symbol of Leadership . . .

KERSHAW
MANUFACTURING CO. INC.
MONTGOMERY ALABAMA

4 ft. 9 in. of switch point insurance

Here is dependable insurance against wheel-climbing, flange-cutting, and derailments in switching operations. It's the Bethlehem Switch Point Guard Rail, Model 755.

This new accessory is simply a 4-ft-9-in. length of heat-treated tee rail, chamfered at the ends and ruggedly braced at the sides. And what a job of protection it does!

Notice that the head of the guard stands higher than the stock-rail head. This extra height permits Model 755 to give wheels a gentle shove away from the point of the switch, and effectually prevents "picking" and cutting of this expensive switch component. Trucks thus roll smoothly through the switch, and troublesome derailments are avoided.

Husky side braces are heavily welded to the special tie-plates and hold the guard rail stubbornly in its proper vertical position. The entire guard-rail assembly is firmly bolted down to the plates, but no bolts are needed through the running rail. The Model 755 Switch Point Guard Rail is equally at home on the right- or left-hand side of the switch without change or adjustment.

The best way to appreciate the value of this recent Bethlehem development is to see it in action. This can easily be arranged by telephone or letter to our nearest district sales office.

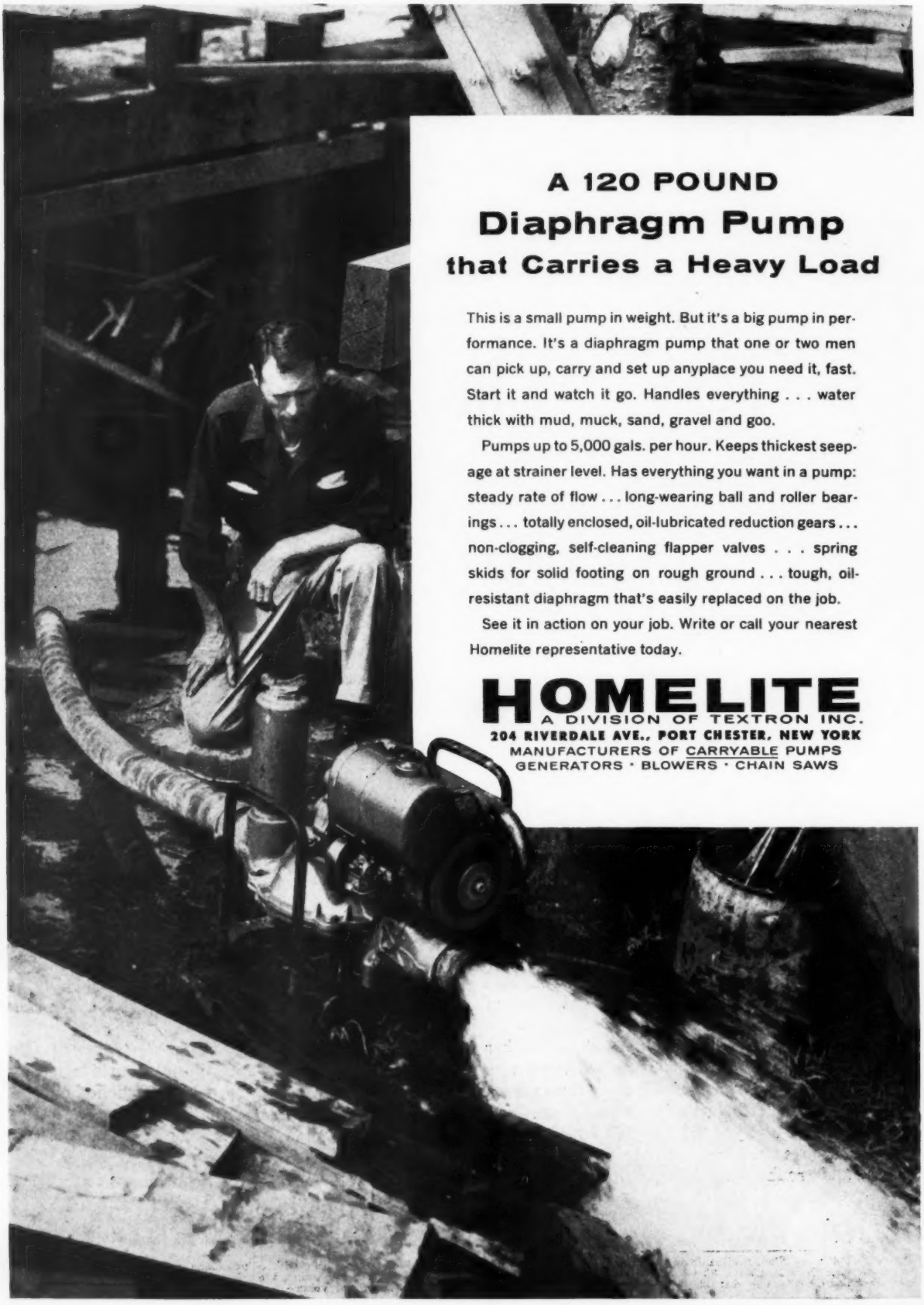
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

Published monthly by Simmons-Boardman Publishing Corporation, Emmett Street, Bristol, Connecticut, with editorial and executive offices at 79 West Monroe Street, Chicago 3, Illinois; 30 Church Street, New York 7, New York. Subscription prices: to railroad employees only in the United States and Possessions, and Canada, one year $2.00. Second class mail privileges authorized at Bristol, Conn. Volume 53, No. 4.



A 120 POUND
Diaphragm Pump
that Carries a Heavy Load

This is a small pump in weight. But it's a big pump in performance. It's a diaphragm pump that one or two men can pick up, carry and set up anyplace you need it, fast. Start it and watch it go. Handles everything . . . water thick with mud, muck, sand, gravel and goo.

Pumps up to 5,000 gals. per hour. Keeps thickest seepage at strainer level. Has everything you want in a pump: steady rate of flow . . . long-wearing ball and roller bearings . . . totally enclosed, oil-lubricated reduction gears . . . non-clogging, self-cleaning flapper valves . . . spring skids for solid footing on rough ground . . . tough, oil-resistant diaphragm that's easily replaced on the job.

See it in action on your job. Write or call your nearest Homelite representative today.

HOMELITE
A DIVISION OF TEXTRON INC.
204 RIVERDALE AVE., PORT CHESTER, NEW YORK
MANUFACTURERS OF CARRYABLE PUMPS
GENERATORS · BLOWERS · CHAIN SAWS

ONE DOSAGE of DRY Nalco H-174 for ALL-YEAR WEED CONTROL

Low dosage — usually a small fraction of that of other "apply dry" formulations — is a big advantage you get with H-174. And it's easily explained: Nalco H-174 has an unusually high concentration of powerful killing ingredient. *You get much more killing power with much less chemical to transport and apply!*

Nalco H-174 is effective whenever you apply it, but you can get full advantage from this powerful herbicide by spreading a single dosage about 2 weeks *before* weeds begin to emerge. H-174 will keep them down all year long, eliminating unsightly and inflammable weed debris, preventing re-growth and mid-season seeding.

Spreading *dry*, granular Nalco H-174 is a fast, simple operation. No mixing, spraying, or dilution . . . ready to use as it comes from bag or convenient shaker box . . . distribute by hand or with mechanical spreaders . . . For better weed control, plan on using Nalco H-174!

H-174 is one of a complete line of Nalco weed control chemicals, both dry and liquid, in wide use by railroads and industries throughout the world.

GEARED TO PROGRESS
P R I
MEMBER

NATIONAL ALUMINATE CORPORATION
SPRAY SERVICES DEPARTMENT

6196 West 66th Place
Chicago 38, Illinois

Box 5444
Huntington, W. Va.

CANADA: Alchem Limited, Burlington, Ontario
ITALY: Nalco Italiana, S.p.A.
SPAIN: Nalco Espanola, S.A.
WEST GERMANY: Deutsche Nalco-Chemie GmbH

Nalco®

PRODUCTS . . . SERVING INDUSTRY THROUGH PRACTICAL APPLIED SCIENCE

AJAX CUPS CAN HELP REDUCE ACCIDENT COSTS . . .

. . . CUT DOWN ABSENTEEISM . . . KEEP WORK ON SCHEDULE . . .

This drinking water service offers
3 BIG ADVANTAGES FOR TRACK MAINTENANCE GANGS

1 Whether to comply with the law – which in some states requires it – or simply to promote good employee relationships, many roads now supply clean fresh drinking water to maintenance gangs, by using AJAX Cups and equipment.

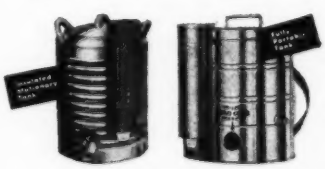
2 Crisp, clean AJAX Cups reduce the hazard of transmitted infections, thus reduce absenteeism, help keep important maintenance work on schedule.

3 Safety-imprinted AJAX Cups aid your accident-prevention program by putting safety messages right in your workers' hands several times daily . . . and safety messages *that get read* do help prevent accidents.

Developed out of long experience with railroad work, AJAX Complete Drinking Water Service is ideally suited to the needs of track maintenance gangs . . . actually works three ways to cut your operating costs.

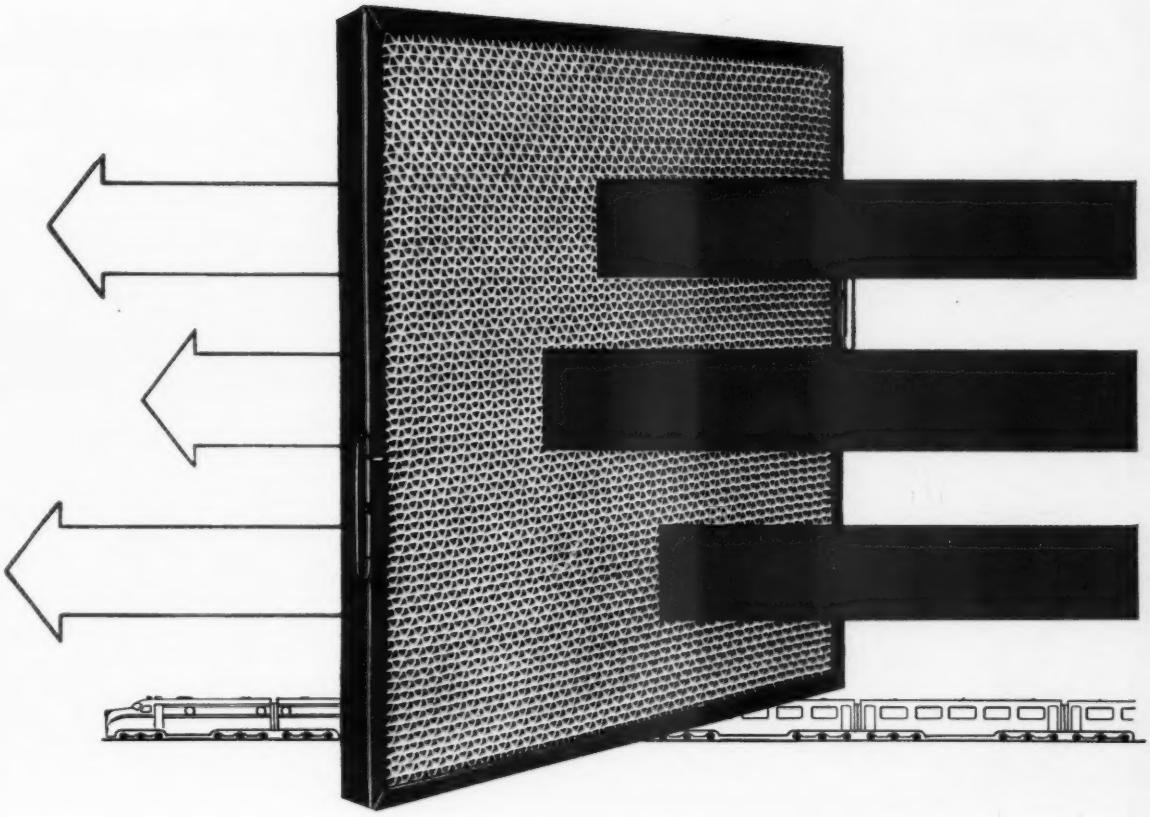
Write today **for samples of imprinted Ajax Cups and new folder giving complete details on complete drinking water service.**

AJAX® CUPS – wedge-shaped, easy to hold–dispense open, ready to drink from; come in 4, 6 and 7 oz. sizes, imprinted with assorted stock safety messages at no extra cost – or your own message to order.



United States Envelope Company

General Offices: **Springfield 2, Massachusetts** ***15 Divisions from Coast to Coast***



Cut maintenance, increase engine life with Esso AIRFIL® Coating Oil

Esso's new AIRFIL Coating Oil for diesel engine air filters has such great dirt pick-up qualities that it can substantially cut maintenance costs and increase engine life. This is possible because of the reduction in abrasive wear, lessening the need for replacements of engine parts. You, too, can profit from these benefits by using Esso AIRFIL Coating Oil in diesel air intake filters, and in air-conditioning filters.

Esso AIRFIL COATING OIL offers three important advantages:

1. Easy to apply...won't drip off. In liquid form when hot, it may be applied quickly in the desired quantity, while at normal temperatures, it is a gel-like solid that won't run off.

2. Superior wicking qualities mean a continually fresh surface is presented to the air. Successive layers of dust are rapidly wetted, keeping dirt-retaining efficiency at a maximum.

3. Insoluble in water . . . won't emulsify, and so resists removal by rain or snow, yet it can be removed quickly by hot detergent wash or steam blast.

Esso offers a complete line of dependable railroad products. Valuable years of experience in research and development, combined with continual testing on the road and in the lab, stand back of the outstanding performance of Esso Railroad products.

Esso

RAILROAD PRODUCTS

For data sheet regarding specifications of AIRFIL Coating Oil, write to Esso Standard Oil Company, Railroad Sales Division, 15 West 51st Street, New York 19, N. Y.

Lackawanna · PRR · Southern Railway · Boston and Maine Railroad · Illinois Central · Canadian Pacific · C&O · Illinois Central · New York Central System · Atlantic Coast Line · Indiana Harbor Belt · B&O · Canadian National Railways · Nickel Plate Road · Reading Lines · NH · Lehigh Valley Railroad · The Bridge Line

SPENO

BALLAST CLEANING and RAIL GRINDING SERVICE

GEARED TO PROGRESS · RPI MEMBER

The exclusive SPENO Method of Ballast Cleaning and the SPENO Rail Grinding Train have proved themselves to be time, cost, and maintenance savers for our contractual clients.

You may contract for one or both of these services—secure that you have joined company with many other outstanding and forward looking railroads.

Write today for future availabilities of equipment.

Just Ask the Railroads That have used us!

FRANK SPENO RAILROAD BALLAST CLEANING CO., INC.

306 North Cayuga St., Ithaca, N. Y.

The USS Solid Manganese Steel Self-Guarded Frog–

improves performance...minimizes maintenance...proves economical

The USS Self-Guarded Frog incorporates raised guards which have been cast integrally with the frog body. The guards guide the wheels past the frog point, eliminating the need for separate guardrails in the track opposite the frog. Therefore, a self-guarded frog is more economical than any other comparable frog that requires separate guardrails.

Cast in one piece from tough manganese steel, USS Self-Guarded Frogs are virtually maintenance-free, requiring no periodic body bolt tightening as do bolted rigid or railbound frogs and their guardrails. When used in freight classifying yards, terminals, and industrial yards, USS Solid Manganese Steel Self-Guarded Frogs will give many years of dependable service under rugged conditions. Hook twin frog plates shown under the frogs are also a specialty of United States Steel.

For complete data, photographs, and diagrams on the full line of USS Trackwork products, send for the free catalog, "USS TRACKWORK." Address your request to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa. Also, you are invited to contact our engineers at any time for assistance in design.

USS **TRACKWORK**

UNITED STATES STEEL CORPORATION, PITTSBURGH · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

7-627

UNITED STATES STEEL

PRESENTING THE KAISER ALUMINUM

DOUBLE-FACED CROSSBUCK

New insert panel permits identical warning message area on *both* sides

Here's a unique new extruded crossbuck design—exclusive with Kaiser Aluminum—with a removable insert feature permitting either single *or* double faced installation. When in place, this insert sheet provides a smooth, wide lettering surface on the back of the sign just as on the front, warning motorists from both directions.

Sturdier

With or without the insert, this crossbuck is so strong it will withstand winds of 100 miles per hour. Its secret: the high strength of Kaiser Aluminum's 6063-T6 alloy, plus the special 4-ribbed design of the sign itself. (Notice, also, how the outer ribs are placed to protect the leading edges, while the inner ribs are located close to bolt shanks to resist crushing when the nut is tightened.)

Saves you money 4 ways

1. Unlike other sign materials, aluminum can be *extruded*, permitting one-piece, reinforced construction for economical mass production.

2. The aluminum arm weighs only one-fourth as much as a steel arm, one-half as much as one of wood. This means easier handling by a minimum service crew . . . *plus* sharply reduced shipping charges.

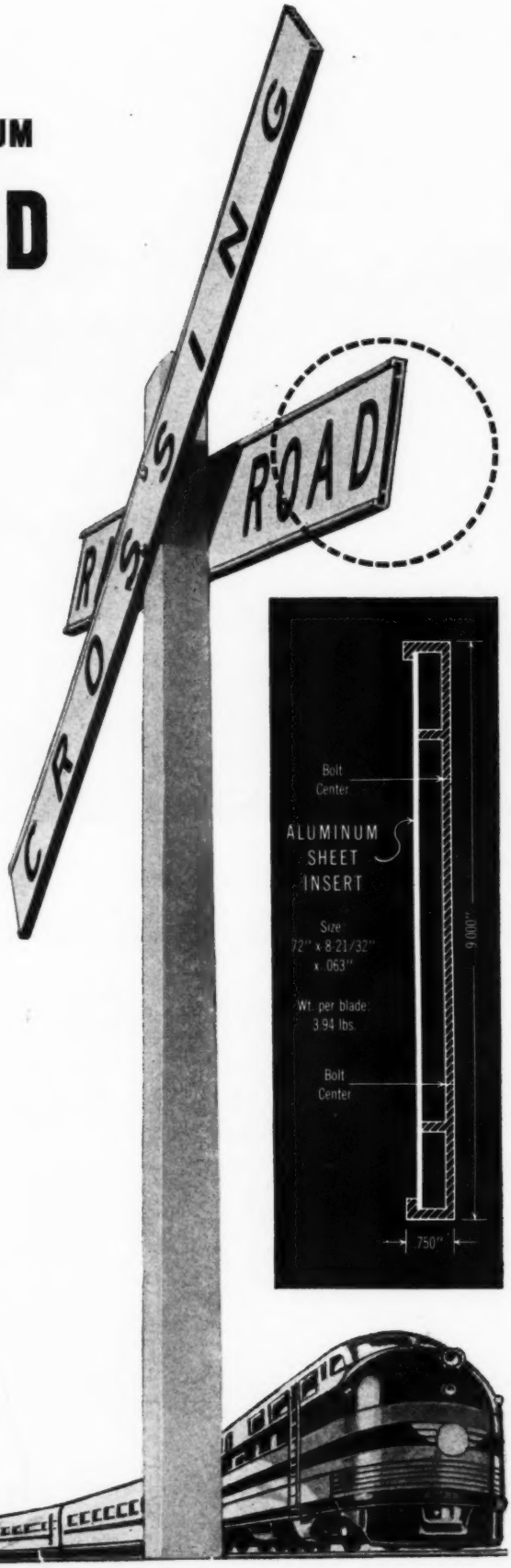
3. Aluminum crossbucks won't rust, rot or warp, thus keeping maintenance and replacement costs to a minimum.

4. One Kaiser Aluminum crossbuck will do for either single- or double-faced installations—multiple stocks unnecessary.

Ideal mounting surface

Recommended for reflective materials such as "Scotchlite" brand reflective sheeting. Reflective sheeting is applied to the insert in the same easy manner as to the extrusion—no special hand application necessary. Also, excellent base for paint or reflective buttons.

For further information, contact your nearest Kaiser Aluminum Sales Office. Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office*, Palmolive Bldg., Chicago 11, Illinois; *Executive Office*, Kaiser Bldg., Oakland 12, California.

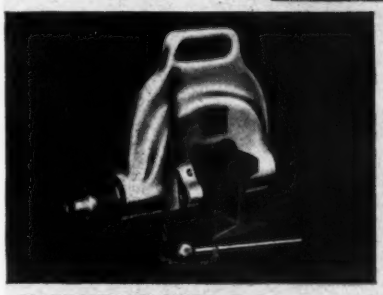


Kaiser Aluminum

See "THE KAISER ALUMINUM HOUR." Alternate Tuesdays, NBC Network. Consult your local TV listing.

MAKE THIS "SWITCH" AT SWITCH POINTS

to get DOUBLE PROTECTION from TROUBLE

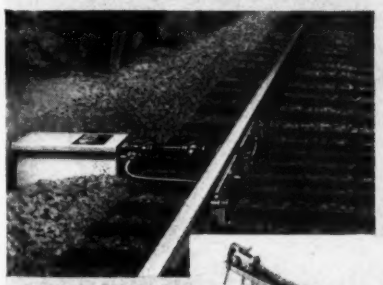


VELOCITY POWER RAIL PUNCH
Takes only an instant to punch clean, smooth hole for track bolts. Needs no electricity, compressed air, hydraulic power; operates from small blank cartridge; no open flash or recoil. Only one major moving part, the piston.

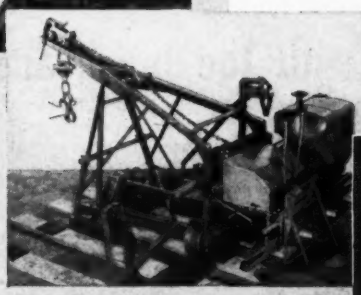
MACK SWITCH POINT PROTECTORS

Perhaps you have never realized that the point of the switch rail (which is the weakest part of the switch) receives the maximum impact and wear in deflecting wheels at switches! More and more railroads are double-guarding this trouble spot by installing Mack Switch Point Protectors, which make switch points serve up to 10 times longer than when unprotected—4 to 5 times longer on the original application . . . and then for another equal period when the protectors are removed, reversed and reapplied.

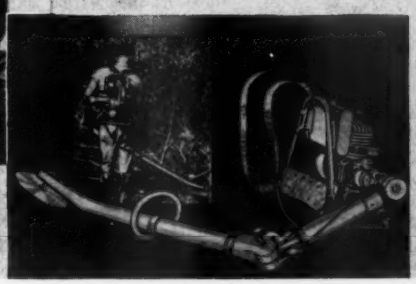
★ **Maintenance Equipment Company** ★
Division of Poor and Company
RAILWAY EXCHANGE BUILDING • CHICAGO 4, ILLINOIS



MECO RAIL AND FLANGE LUBRICATOR
Doubles to quadruples curve rail and locomotive wheel flange life by reducing friction between rails and wheel flanges on curves. Also makes possible higher speeds with greater safety.



MECO POWER RAIL LAYER
Reduces labor cost to a minimum in laying Standard Rails, Long Rails or Continuous Welded Rail. Operates efficiently with large gang of 100 men or more and requires a machine crew of only 3 or 4 men.



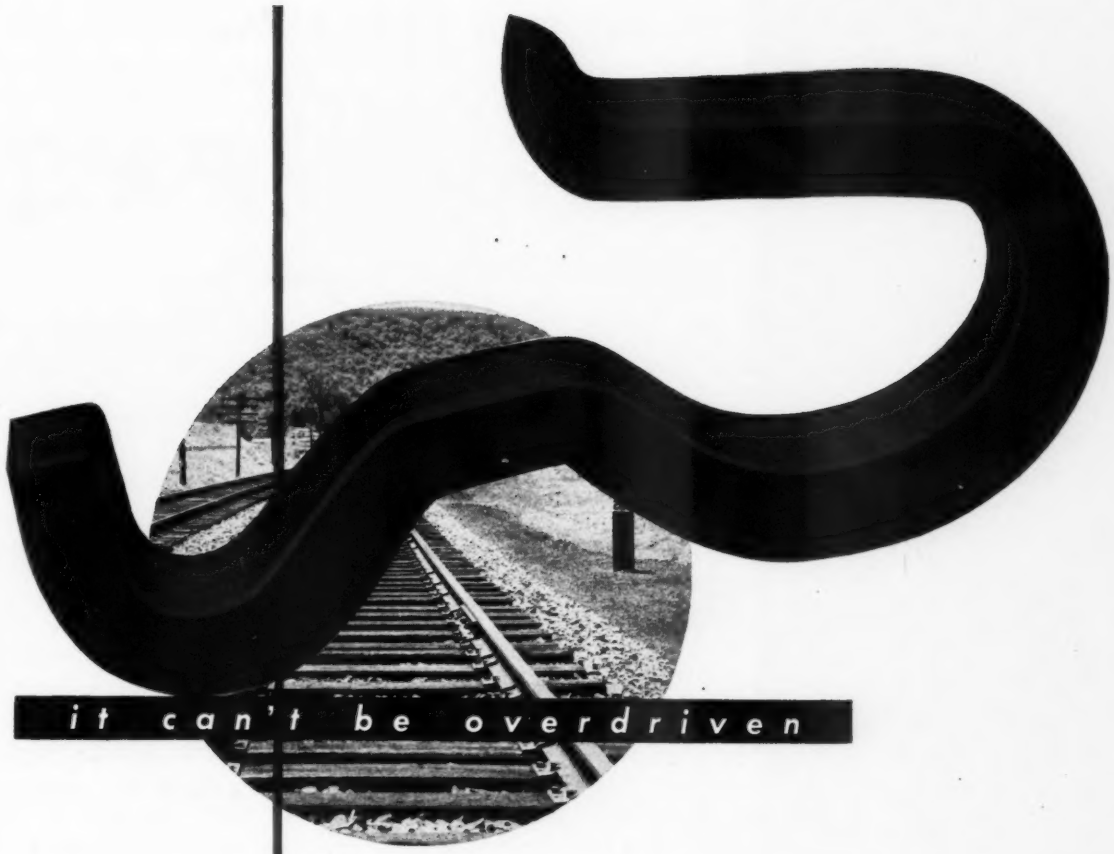
BRUSH CUTTER
Cuts right-of-way maintenance costs. One operator with the new, light-weight, Southworth can do the work of eight men using brushhooks or scythes. Extreme maneuverability, "work horse" power, light-weight are important advantages.

R-1315-R

"O.K., expert . . .
you tell me . . .
What makes Bogle such a killer with the brush and weeds?"

First, we know our chemicals. Extensive "on-track" research shows us the correct chemical for every particular need. Add to that our highly trained personnel, specially engineered equipment and 32 years experience and you've got the answer. May we map out a program specifically designed for your road's requirements?

The R. H. Bogle Company
ALEXANDRIA, VIRGINIA
Memphis, Tennessee



the improved

GAUTIER RAIL ANCHOR

This year marks the biggest in sales and acceptance in Gautier's history. Its outstanding performance under all track conditions has made it more in demand with track engineers and maintenance-of-way men than ever.

The Gautier is a heavy, one-piece rail anchor made of alloy steel. It is designed so that it can't be overdriven, so that it can be used again and again without losing its holding or gripping power, so that it can be applied with a maul or spike maul.

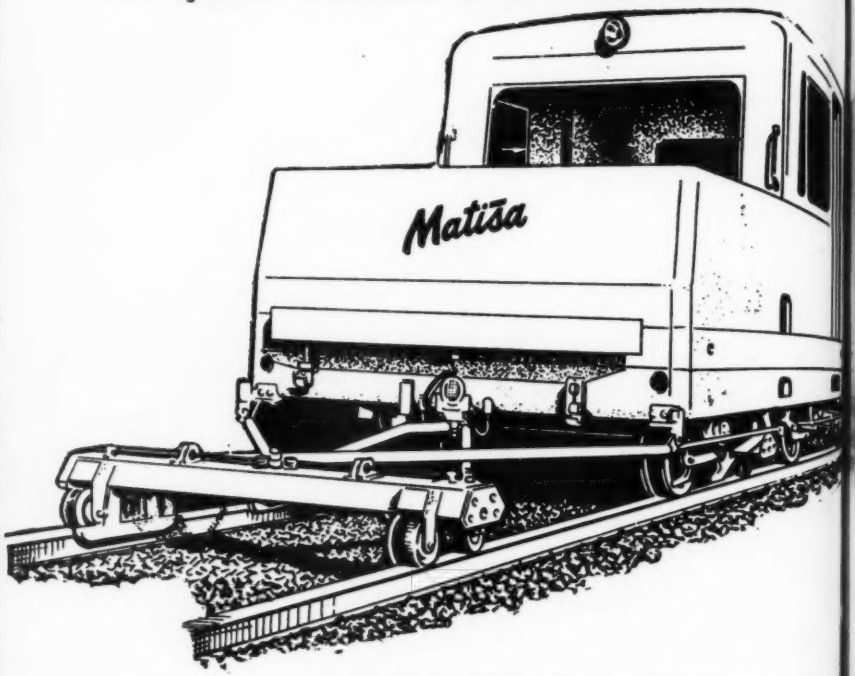
Next time specify Gautier—the outstanding rail anchor on the market.

MID-WEST FORGING & MANUFACTURING COMPANY

General Offices, 38 S. Dearborn St., Chicago 3, Ill.
Manufacturing Plant, Chicago Heights, Ill.
Distributors: **D. V. MAHER, Cleveland, Ohio; MILTON W. ALLEN, Denver, Colorado; JOHN O'BRIEN, St. Paul, Minnesota**
W. T. RICHARDS, ROBERT A. BAER, San Francisco, California; G. C. HUNT & CO., Atlanta, Georgia

Matisa

TRACK INSPECTION CAR ASSURES YOU QUALITY CONTROL for your TRACK MAINTENANCE



THIS NEW INSPECTION CAR—

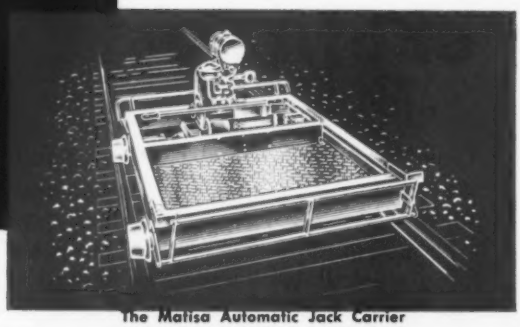
(1) RECORDS quickly and precisely the condition of track prior to starting programmed work;

(2) EVALUATES the effectiveness of completed work programs;

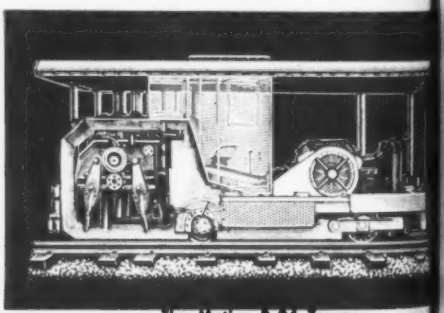
(3) MAINTAINS a graphic record of all inspections;

(4) CREATES INCENTIVES for supervisory officers, foremen and men.

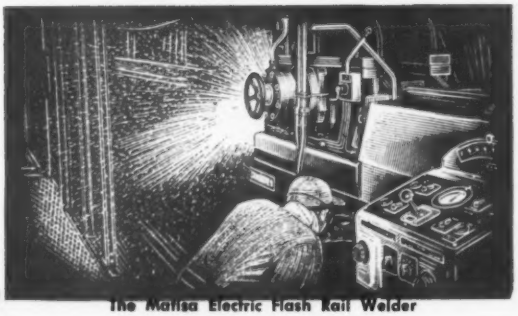
OTHER MATISA TRACK MAINTENANCE MACHINES



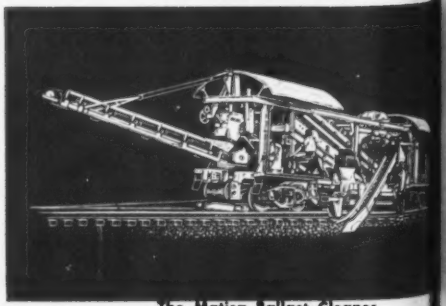
The Matisa Automatic Jack Carrier



The Matisa B-24 Tamper



The Matisa Electric Flash Rail Welder



The Matisa Ballast Cleaner

Matisa

EQUIPMENT CORPORATION

1020 WASHINGTON AVE. • CHICAGO HEIGHTS, ILLINOIS

News Notes

. . . a resumé of current events throughout the railroad world

RAILWAY
TRACK and STRUCTURES
APRIL, 1957

The Interstate Commerce Commission has authorized the merger of the Nashville, Chattanooga & St. Louis into the Louisville & Nashville for ownership, management and operation. The Atlantic Coast Line has been authorized to continue its direct control of the L&N which will rank eighth in net income among the nation's railroads with a total mileage in excess of 6,000.

•

On March 18, a three-man Presidential emergency board recommended a 26½-cent-an-hour wage boost over a three-year period to end the dispute between railroad operating unions and 175 railroads. The board's recommendation approximates what the railroads had offered and the brotherhoods rejected. In its report, the emergency panel said it was convinced the carriers' pattern was better than what the unions offered and that the recommended pattern is "an excellent opportunity to give heed to the recent appeal by the President that labor and industry cooperate in putting a halt to the inflationary wage-price spiral."

•

The Civil Aeronautics Administration has announced "it seems probable" that "in terms of passenger-miles, air travel will exceed total rail traffic within the next two years and, by 1970, should account for more than two-thirds of the total common carrier traffic."

•

The Pennsylvania, come April 28, will schedule its entire passenger service on daylight saving time. The New York Central, at the same time, will base its timetables on "people's time"—either standard or daylight, depending upon the communities served.

•

Roy Fruehauf, president of the Fruehauf Trailer Company, said recently: "The railroad box car is on the way to the Smithsonian Institution." He prophesized "that every Class I railroad will offer piggyback service within the next several years," in predicting that the time is not far off when all the freight now carried in box cars will be moved instead in truck trailers handled on flat cars.

•

An infrared ray system to detect hot boxes has been installed on the Reading. The detector consists of an infrared camera, the lens of which records the temperature of each passing journal. A thermal relay operates to indicate any overheated journal at the next signal or control tower ahead.

•

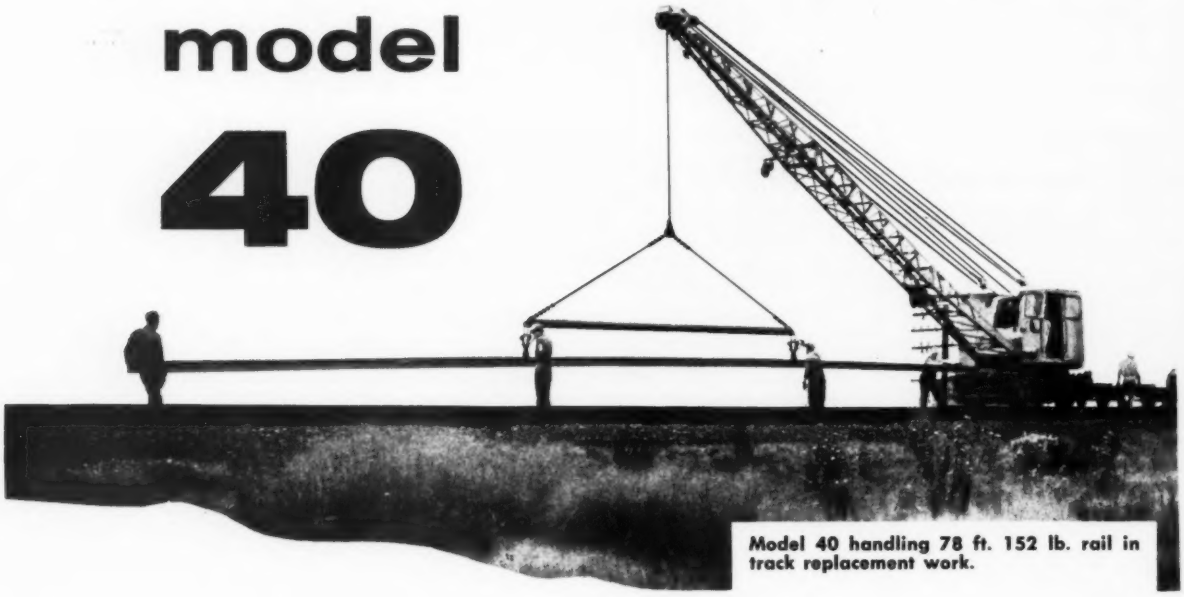
Substantial tax reductions seem to be in the offing for railroads operating in New Jersey. A recent State Supreme Court order to bring taxes on non-main-line railroad property in line with levies on real property, may cut the railroads' taxes by over $4 million.

•

Another favorable action on the state level is underway in California where the legislature is considering a bill to put definite limits on what railroads are required to pay for highway grade crossing elimination projects. Basically, the bill, in allocating costs, would consider who initiated the project and who would benefit from it.

BURRO

model 40



Model 40 handling 78 ft. 152 lb. rail in track replacement work.

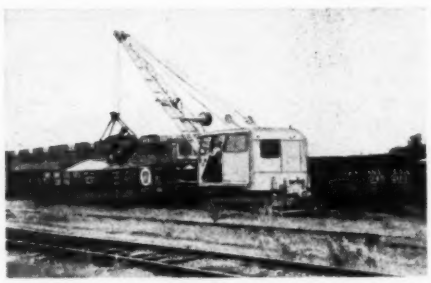
bigger . . . faster . . . more powerful

Already in service on a number of railroads, the newest Burro Crane . . . Model 40 . . . is proving itself to be as efficient and versatile as the Model 15A and Model 30 Cranes. Greater capacity, faster travel speeds and increased drawbar pull give the Model 40 a wider operating range and permit its use on more jobs with even greater operating economies. Also, the increased power and speed permit the Model 40 to be used for handling continuous rail.

Model 40 Features:

- **12 Ton Capacity**
- **Travel speeds to 28 mph.**
- **9000 lbs. drawbar pull**
- **Improved air operated controls**
- **Compact design, short tail swing — will not foul adjoining track.**
- **Available with Booms up to 55 ft. long**

Write for illustrated brochure and complete details on Model 40 Burro Cranes.

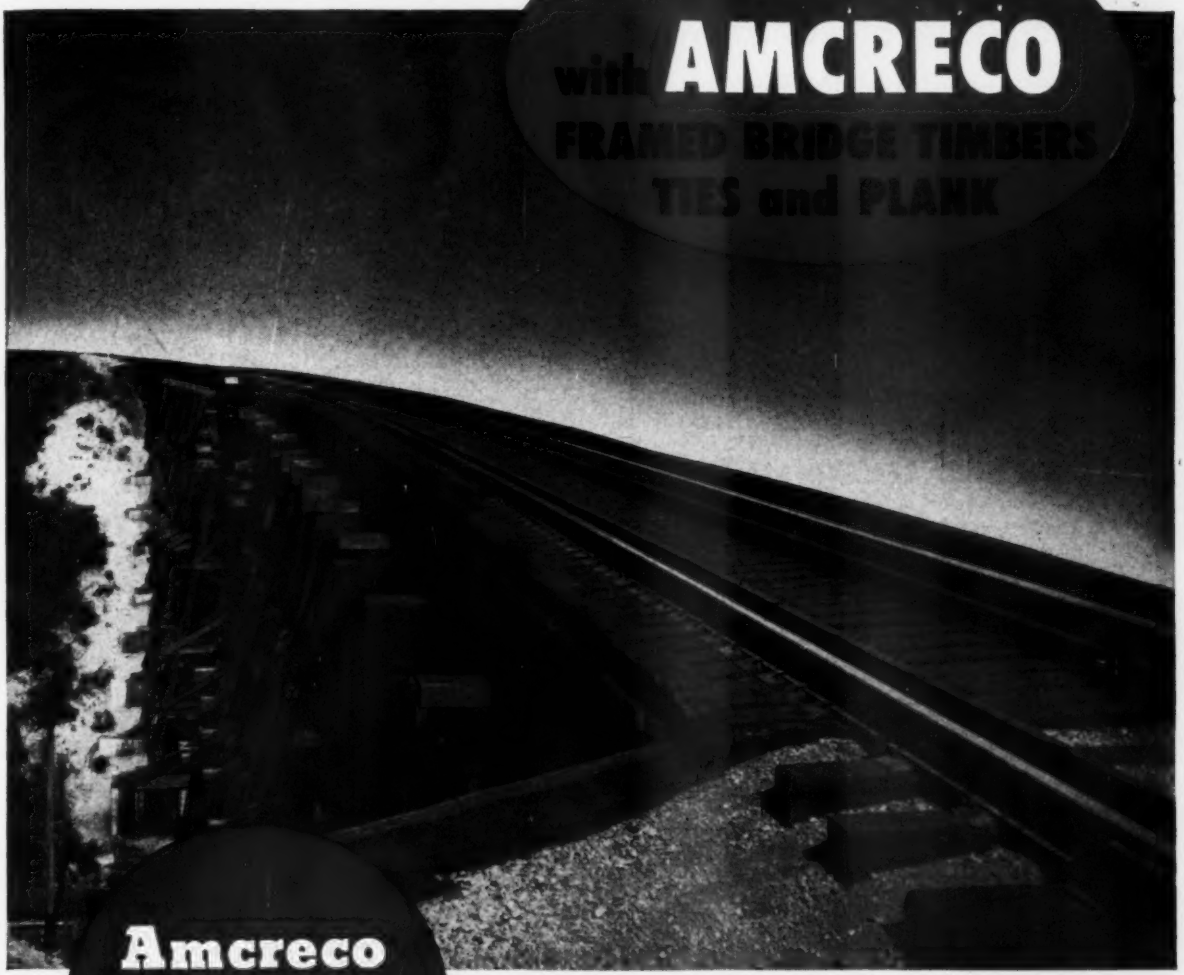


Equipped with clamshell bucket, Model 40 is a fast, efficient bulk material handling crane.

Loading rail. Model 40 will haul 6 to 8 loaded cars.

CULLEN-FRIESTEDT CO.
1301 SOUTH KILBOURN AVENUE • CHICAGO 23, ILLINOIS

BRIDGE BUILDING IS FASTER . . . EASIER . . . MORE ECONOMICAL . . .



Amcreco
Lowry Process
Creosoted Products

Timbers • Bridge Ties
Adzed and Bored Cross Ties
Poles • Plank

Build longer lasting timber bridges — faster and easier by building with Amcreco framed bridge timbers, ties and plank. Speedy erection means fewer man hours and lower first costs.

You save in the long run too, because Amcreco products are pressure treated with creosote to protect the natural strength of the wood from insects, fungi and marine borers. This means extra years of service with reduced maintenance throughout the life of the structure.

Take advantage of our nearly half a century of experience in serving the railroad industry. Any of our conveniently located sales offices will be pleased to go over your next requirements with you.

AMERICAN CREOSOTING CORPORATION

Colonial Creosoting Company
Federal Creosoting Company
Indiana Creosoting Company

AMCREO Lowry Process

Gulf States Creosoting Company
Georgia Creosoting Company
Kettle River Company

GENERAL OFFICES: LOUISVILLE 2, KENTUCKY

One of the 160 Uses of CONCRETE on Railroads

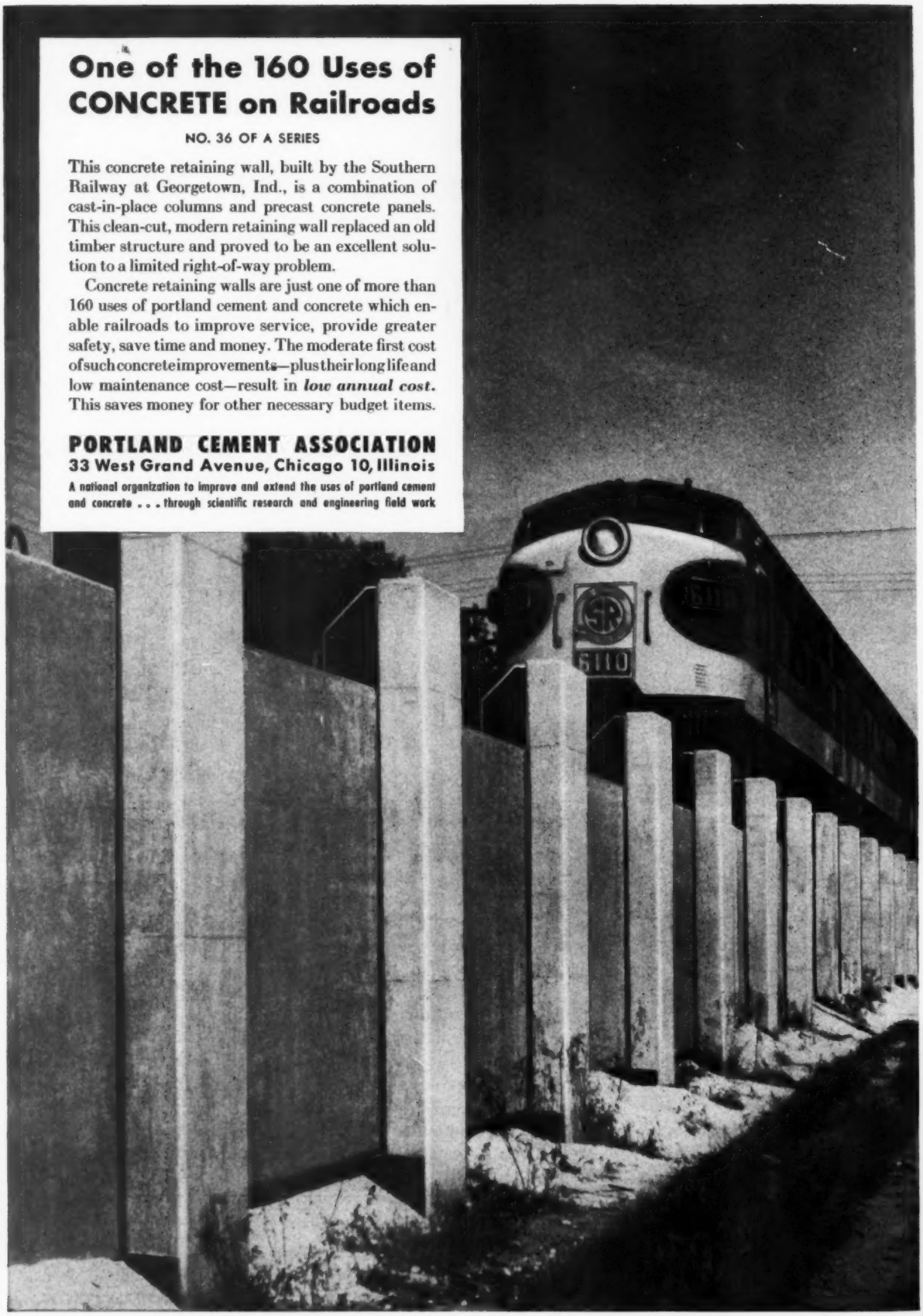
NO. 36 OF A SERIES

This concrete retaining wall, built by the Southern Railway at Georgetown, Ind., is a combination of cast-in-place columns and precast concrete panels. This clean-cut, modern retaining wall replaced an old timber structure and proved to be an excellent solution to a limited right-of-way problem.

Concrete retaining walls are just one of more than 160 uses of portland cement and concrete which enable railroads to improve service, provide greater safety, save time and money. The moderate first cost of such concrete improvements—plus their long life and low maintenance cost—result in ***low annual cost.*** This saves money for other necessary budget items.

PORTLAND CEMENT ASSOCIATION
33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work



Quality

GAGE and LINE go "hand in hand"

. . . get better riding track with these 2 NORDBERG *"Mechanical Muscles"*®

● *With the Nordberg Dun-Rite,* the gaging operation follows right behind the Adzers and fastens the tie plates to the ties in exact position, so that when the rail is placed the head-to-head gage is correct. The Dun-Rite method is base gaging and it is actually the outside shoulder of the tie plate which is gaged. *Write for Bulletin 220.*

With the self-contained, self-propelled Nordberg Trakliner, you can line track in connection with track raising, spot surfacing, new work or improvement programs at amazing savings. The Trakliner uses easily controlled hydraulic power to line the track any desired amount. Two men and the Trakliner will line all the track a gang can raise or spot surface in a day. *Write for Bulletin 230.*

Many major roads have proved that these two sets of Nordberg "Mechanical Muscles" have given them better gage, better line and hence better track—at appreciable savings in time and maintenance dollars . . . another example of the advantages you get by using Nordberg Track Machinery.

USE NORDBERG *"Mechanical Muscles"*® TO DO A BETTER, FASTER MAINTENANCE JOB AT LOWER COST

© 1955, Nordberg Mfg. Co.

R255-R

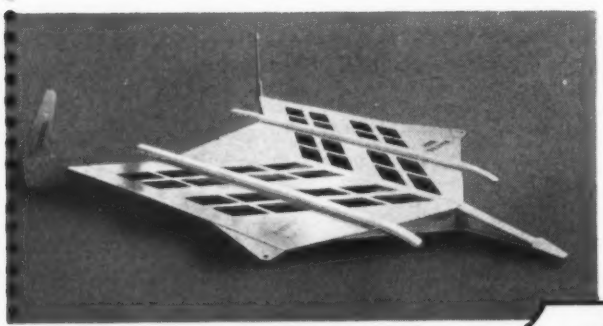
ADZING MACHINE • BALLAST ROUTER • CRIBEX • BALLASTEX • SCREENEX • HYDRAULIC & MECHANICAL SPIKE PULLERS • SPIKE HAMMER • TIE DRILL • POWER JACK • POWER WRENCH • RAIL DRILL • RAIL GRINDERS • TRACK SHIFTER • DSL YARD CLEANER • TRAKLINER • DUN-RITE GAGING MACHINE • GANDY—TIE PULLER and INSERTER

NORDBERG MFG. CO., *Milwaukee, Wis.*

NORDBERG MACHINERY

These Railroads have Proved you save Track Costs the patented MANNIX way!

- The Baltimore & Ohio
- Bangor and Aroostook
- Central of Georgia
- The Chesapeake & Ohio
- Chicago and North Western
- Chicago, Burlington & Quincy
- Delaware & Hudson
- The Denver & Rio Grande Western
- Great Northern
- New York Central System
- Northern Pacific
- The Pennsylvania
- St. Louis Southwestern
- Southern Pacific Company
- The Texas & Pacific
- Ft. Worth & Denver
- Seaboard Air Line

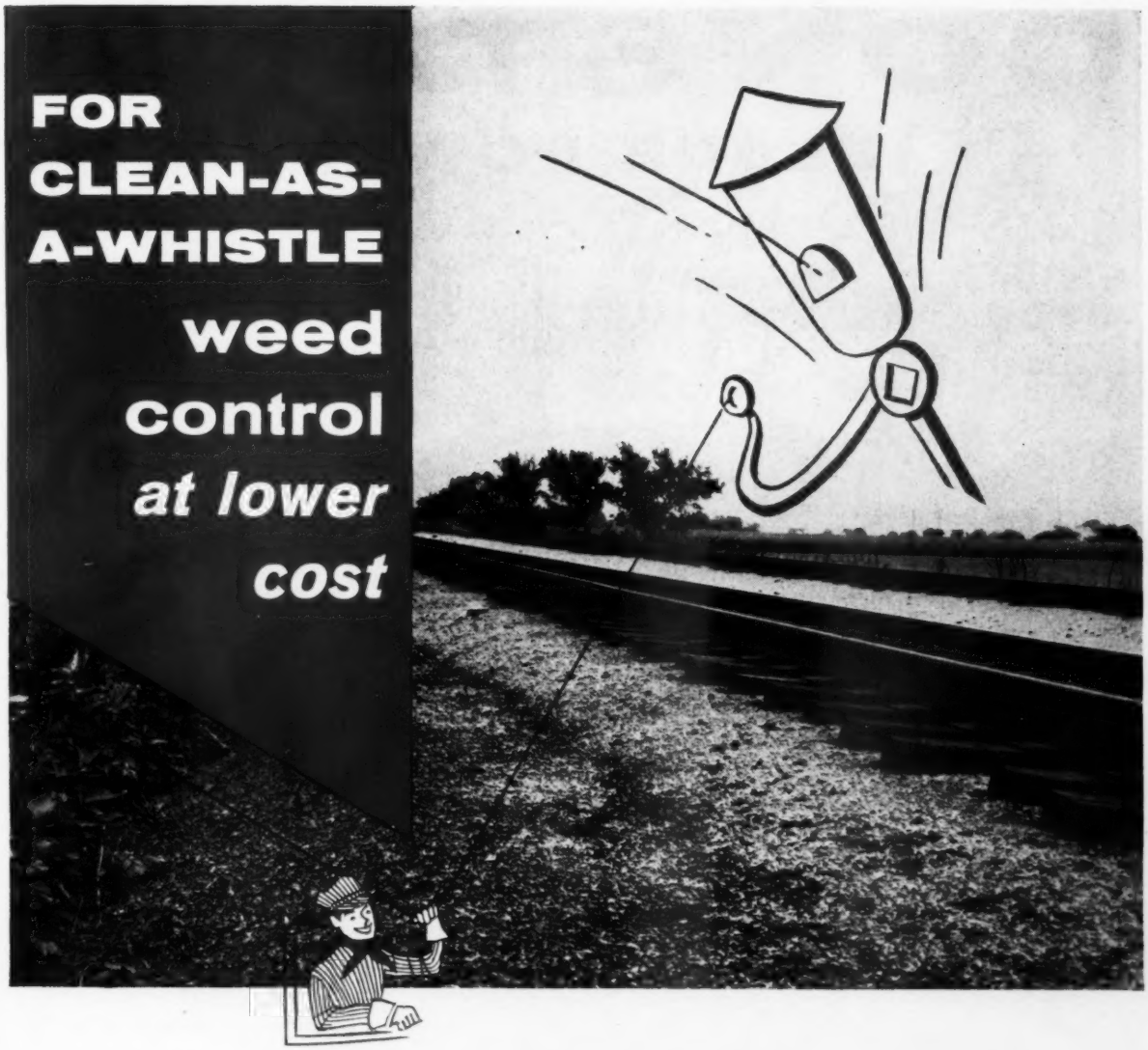


Proven on the job by all these modern railroads . . . the Mannix Sled/Plow method can save money for you! Recent *Railway Track and Structures* articles give further proof of its cost-cutting efficiency on track maintenance and rehabilitation programs. Write for full details of the patented Mannix Sled and Plow . . . and the special rental plan available.

MANNIX INTERNATIONAL INC.

4020 Minnetonka Boulevard, Minneapolis 16, Minnesota • Phone: WAlnut 7-9411

FOR CLEAN-AS-A-WHISTLE weed control *at lower cost*



it's UROX* WEED KILLER

because...

- UROX is amazingly effective
- UROX lasts longer
- UROX offers cumulative, "carry-over" herbicidal action
- UROX requires fewer applications
- UROX in small quantities does the job
- UROX is easy to use
- UROX does not require expensive equipment
- UROX has low toxicity for men and animals
- UROX does not increase flammability of vegetation

GENERAL CHEMICAL WEED CONTROL

*General Chemical Trade-Mark

Get the whole story right away! Write to

WEED KILLER DEPARTMENT

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

CONSTANT
BLADE POWER

HUBER
W
WARCO

6-D & 7-D SERIES MOTOR GRADERS

The tail-shaft governor on the Huber-Warco 6-D & 7-D motor graders automatically adjusts the engine RPM to meet load conditions. This assures constant power at the blade for a greater work volume. Torque-converter and power-shift transmission are standard. See your nearest Huber-Warco distributor for details.

HUBER-WARCO COMPANY • Marion, Ohio

ORTON®

Torque-Control

multiple purpose DIESEL WRECKER, PILE DRIVER and BRIDGE DERRICK

The ORTON combination has a straight wrecker boom which is long enough for use as a bridge derrick.

Pendent pile driver leads are furnished, permitting batter in both directions. Leads fold automatically when boom is lowered.

The 160-ton combination wrecker and pile driver is the ideal machine for roads which cannot justify the purchase of a single purpose unit. Larger roads find it more economical to use the single purpose wrecker for main line use; however, the combination big-hook and pile driver is just the answer for branch line use.

This unit is never idle — when it's not on emergency use, it is a work-horse for yard or B&B use. It can also be used as a bridge derrick with its 50-ton whip fall block.

SEND FOR BULLETIN #89

ORTON CRANE AND SHOVEL CO.
608 S. DEARBORN ST., CHICAGO 5, ILL.

A MILESTONE IN **RIBBONRAIL** SERVICE!

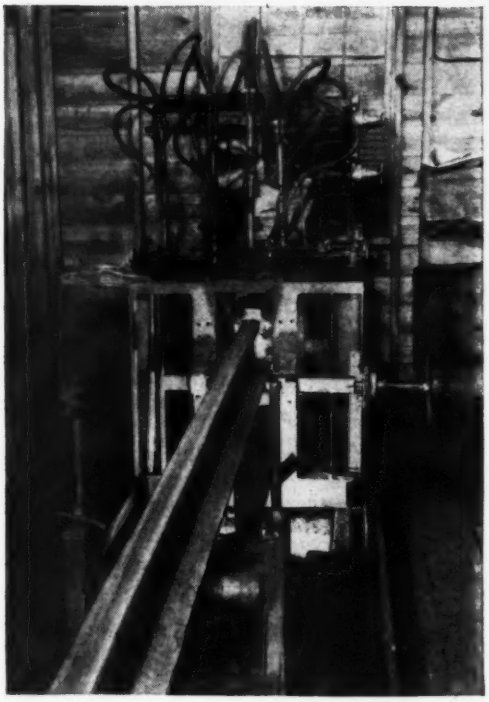
Pressure Welding Proves Efficient, Economical

With completion of the 500,000th oxy-acetylene pressure weld, a milestone in the acceptance and development of RIBBONRAIL service has been passed. Today, railroads are saving thousands of dollars annually on track maintenance in yards and stations, on bridges, and in main line track . . . and still greater savings are in the making.

Welded Joints Now Cost Less Than Bolted Joints

The history of welded rail is one of increased operating efficiency, and lower weld cost. Today it actually costs less to weld rail than it does to connect it with bolted joints. Smooth, "clatter-free" welded rail eliminates the cost of battered rail end build up, and signal bond and joint bar maintenance. Yes, RIBBONRAIL service is the trend in modern railroading.

Plan your RIBBONRAIL service program now. Call or write your local LINDE representative for detailed information.



Weld passes through a "normalizing" machine above. When it cools, the weld will be ground—and then ready for service.

RAILROAD DEPARTMENT

Linde Air Products Company

A Division of Union Carbide and Carbon Corporation

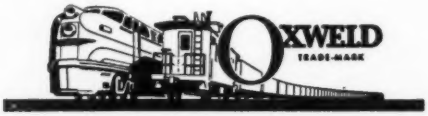
30 East 42nd Street UCC New York 17, N. Y.

Offices in Other Principal Cities

In Canada: LINDE AIR PRODUCTS COMPANY

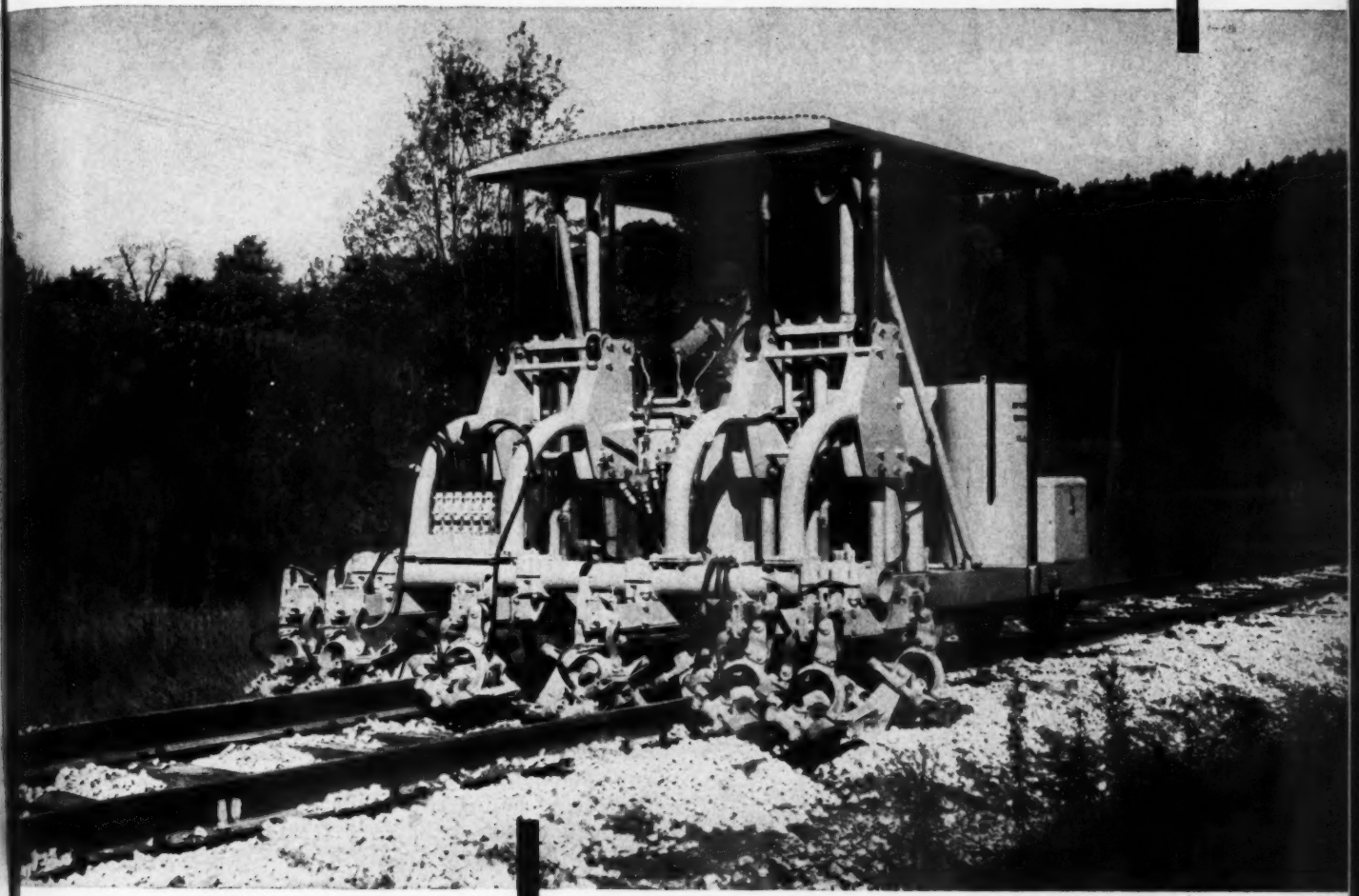
Division of Union Carbide Canada Limited, Toronto

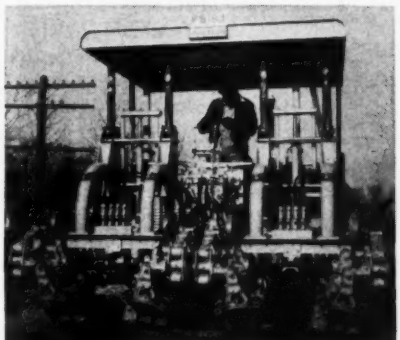
"Linde" and "Oxweld" are registered trade-marks, and "Ribbonrail" is a registered service mark of Union Carbide and Carbon Corporation.



The familiar symbol of over forty years' service to the railroad industry.

It's NEW! *It's a* LULU!





JACKSON TRACK MAINTAINER For *both* putting up and maintaining track in an *unlimited range* of ballast and conditions this powerful machine has no rival!!!

JACKSON MANUALLY GUIDED TIE TAMPERS These machines and the power plants from which they are operated, are exceedingly efficient; widely used by small gangs in low lifts and smoothing work, cross-overs and spots the on-track machines can not reach.

This VASTLY IMPROVED VERSION OF THE

JACKSON MULTIPLE TAMPER

Better than ever for the many who need a fast, uniform and economical ballast placement machine for construction, rehabilitation or new ballast construction of any kind where the raise is high. OK also for regular out-of-face maintenance when track lift equals or exceeds maximum ballast dimension. OK again for low lifts and smoothing in sandy or "small grain" ballasts when great penetrating power is not required. For the small road, the contractor, and the class 1 road having high lift programs or work in light ballast, this low-cost, versatile, medium power tamper is ideal. *Split Crosshead* and *faster indexing from tie to tie* are some of its major improvements. Let us give you the complete facts.

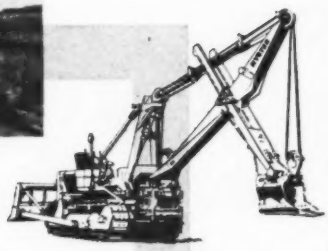
Acquirement plans to suit your needs.

JACKSON VIBRATORS, INC.

LUDINGTON, MICHIGAN

HYSTAWAY® EXCAVATOR-CRANE

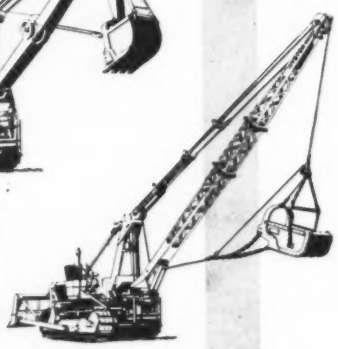
TODAY'S MOST *Versatile* RAILWAY MAINTENANCE MACHINE



SHOVEL

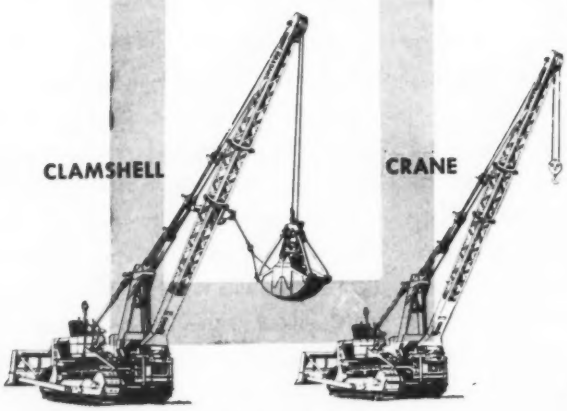
BACKHOE

DRAGLINE

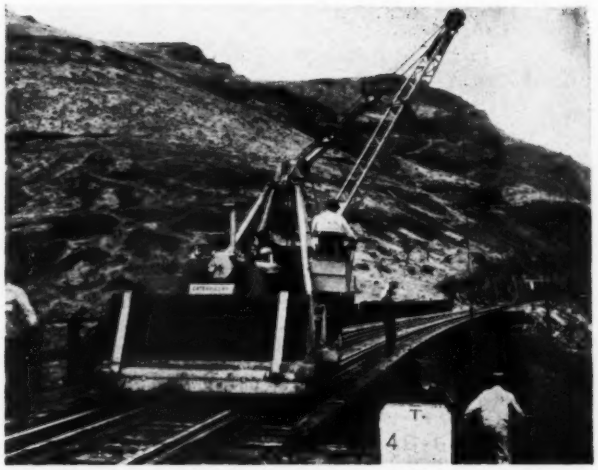


CLAMSHELL

CRANE



Hystaway is a registered trademark of Hyster® Company
Caterpillar is a registered trademark of Caterpillar Tractor Co.



HYSTAWAY, mounted on Caterpillar D8, D7 or D6 tractor, provides an all-purpose machine that can handle all these maintenance and construction jobs:

Loading and Unloading Rail
Laying Rail
Handling Construction Materials
Handling Ballast
Lifting Equipment Off Track
or as a bulldozer—
Ditching and Filling
Grading, Clearing

These are only a few of the jobs that make Hystaway the ideal Right-of-way maintenance machine.

Exclusive **HYSTAWAY** *advantages:*

Complete Track-Type Tractor Mobility
Moves on or off track quickly; travels equally well on the track, or over rough ground.

No Tail Swing
Can work from inside gondola car in confined areas anywhere. 240° boom swing provides a wide working range.

Powered by Tractor Diesel Engine means faster, more efficient performance.

Conventional Lever-Bank Controls
Easy to operate from convenient adjustable operator's seat.

Converts Fast, for Other Types of Service
Optional Front End Equipment
Gives you full-production—Shovel, Backhoe, Dragline, Clamshell or Crane.

Bulldozer
Ready at all times for light dozing. With the boom removed, it's ready for high production and heavy dozing jobs.

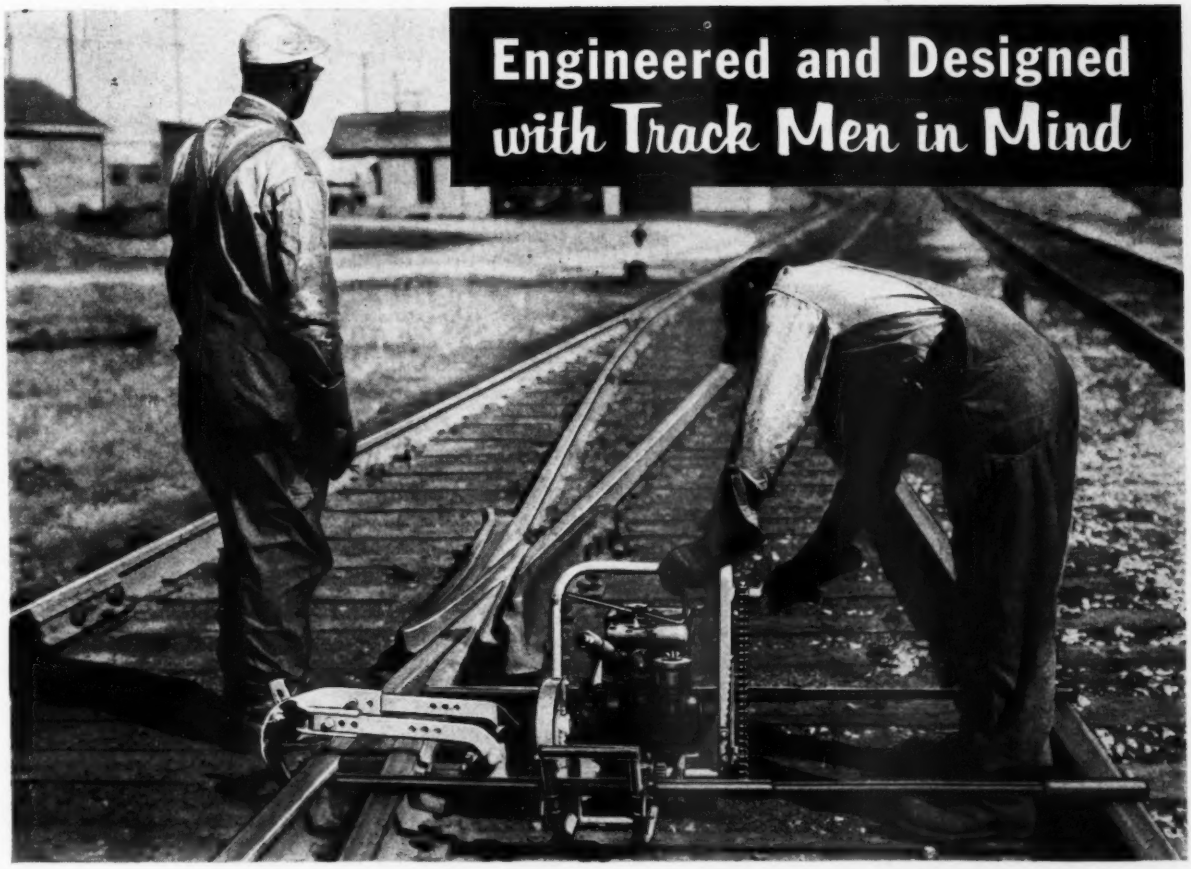
Ask your Caterpillar-Hyster Dealer for further details.

HYSTER COMPANY

HYSTAWAY FOR RAILROAD CONSTRUCTION AND MAINTENANCE

HYSTER

2902-56 N. E. CLACKAMAS STREET.....PORTLAND 8, OREGON
1802-56 N. ADAMS STREET.....PEORIA 1, ILLINOIS
HYSTER N.V. .....NIJMEGEN, THE NETHERLANDS
FACTORIES: Portland, Ore.; Danville, Ill.; Peoria, Ill.; Nijmegen, The Netherlands.



WESTERN FORMERLY BUDA Power Track Drill

Here is a vital piece of equipment in keeping track modernization, expansion and maintenance programs in high gear—the Model P power track drill that has ALL the features essential to economical operation.

EASILY SET UP...and ACCURATE. Can be located from top of rail (with optional telescopic support and locater rods) or positioned on ties and ballast (with long overclutch and adjustable rail guide). No change in set up necessary while working on same size rail.

COMPACT and PORTABLE. Weighs only 130 pounds. Can be started, operated and slid along the rail *by one man.* Easily carried overland by two men.

DEPENDABLE. Gives all-weather, long-life service. Powered by easy-starting 1¾ h.p., 4-cycle Briggs & Stratton air-cooled gas engine. Equipped with Timken roller thrust bearing. Versatile spindle sleeve handles all flat drills from 7/16" to 1 9/16".

SAFE. Can be released and removed from track within 10 seconds . . . no stopping and backing off.

CONTROLLED FEED. Avoids broken and prematurely dulled drills. Sensitive crank-chain mechanism allows operator to vary the thrust accurately according to the hardness of the rail and sharpness of the drill.

FAST. Drills 1⅛" hole in 90 lb. rail in 30 seconds . . . in 155 lb. rail in less than 90 seconds.

HYDUTY-PAULUS MANUAL TRACK DRILL

A track maintainer's tool that every section house should have. Special safety and adjustment features assure precision drilling plus instant emergency detachment.

6803

Write for Detailed Information

WESTERN RAILROAD SUPPLY COMPANY

Maintenance-of-Way Division

2400-2434 South Ashland Ave. • Chicago 8, Illinois

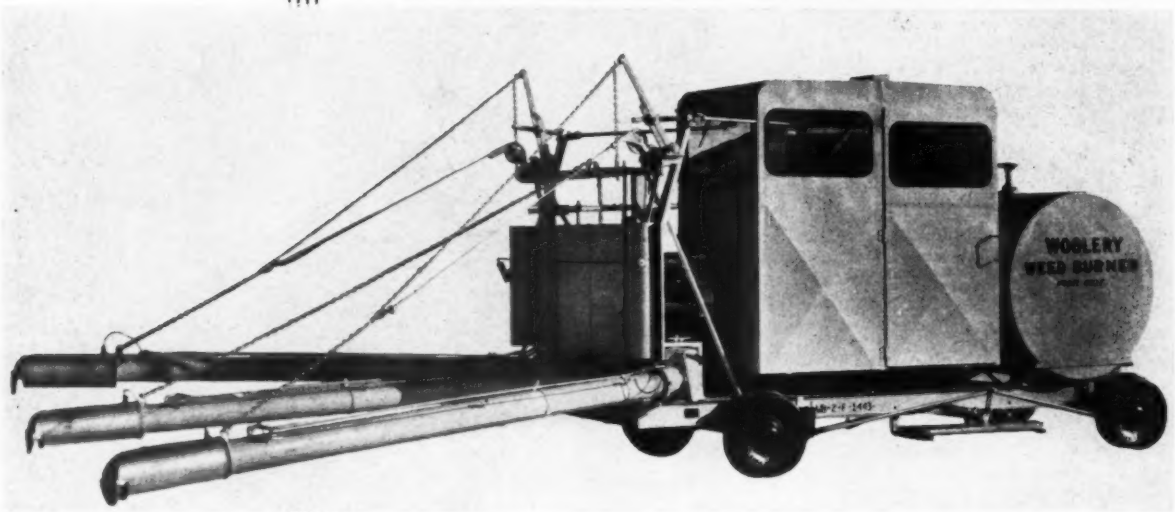
IN CANADA: Melville Machinery Co., Ltd., Montreal 3, Quebec

One of a series of ads featuring new WESTERN products formerly supplied by BUDA

NEW

WOOLERY

WEED BURNER HAS AUTOMATIC TRANSMISSION WITH TORQUE CONVERTER; CONSTANT BLOWER SPEED REGARDLESS OF RATE OF TRAVEL



The NEW WOOLERY
Model WB-2-F
Weed Burner

An all steel cab with safety glass, two entirely separate brake systems and a final drive with chains and sprockets located outside the wheels for easy adjustment are other *new* features of this *new* WOOLERY Model WB-2-F Weed Burner.

CONSTANT BLOWER SPEED AIDS IN YARD WORK OR IN MELTING OF SNOW IN SWITCHES

A separate 15-H.P. air cooled engine is used to drive the blower. Thus when speed is reduced—such as is necessary in yard or snow melting work—the blower speed maintains the same rate and heat intensity.

- Two outside burners can be raised, lowered, swung in or out from inside the cab.
- Electric ignition on each burner head for individual use if desired.
- A 4-cylinder water-cooled engine is provided for propelling the unit.

Also manufacturers of Tie Cutters, Tie End Removers, Tie End Trimmers, Power Bolt Tighteners, Spike Drivers, Motor Cars, Push Cars, Tool Transporters, Extinguisher Cars, Chemical Sprayers, Tie Plate Spacers, Creosote Sprayers, Rail Joint Oilers.

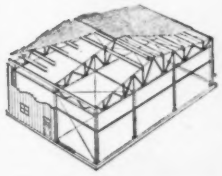
WOOLERY MACHINE COMPANY

2919 Como Ave., S. E., Minneapolis 14, Minn.

There's An Armco Steel Building To Fit Your EXACT NEEDS

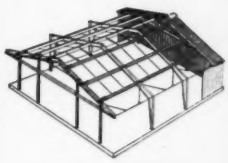
This big truss-type Armco Steel Building provides car repair facilities for the Frisco at Kansas City, Mo. The building is 100′ x 300′.

S-4 BUILDING



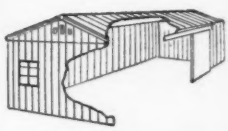
Great Northern owns this rigid frame-type Armco Building. Located at St. Paul, Minn., the 40′ x 102′ structure is used for storage.

S-3 BUILDING



A 20′ x 64′ frameless-type Armco Building provides offices, lockers and shower facilities for yard personnel of the Rock Island at North Enid, Okla.

S-2 BUILDING



Small shed roof-type Armco Steel Buildings can be erected in hours. This one, an 8′ x 10′-8″ switchmen's tender building at Kansas City, Kan., is owned by the Union Pacific.

S-1 BUILDING

These buildings are typical of the many railroad uses for high quality, efficient Armco Steel Buildings. A range of more than 5,000 shapes and sizes makes it easy for you to select the building you need to do the job.

ARMCO DRAINAGE & METAL PRODUCTS, INC., Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

Armco Steel Buildings

For more information or prices, send coupon or call Western Union and ask for Operator 25.

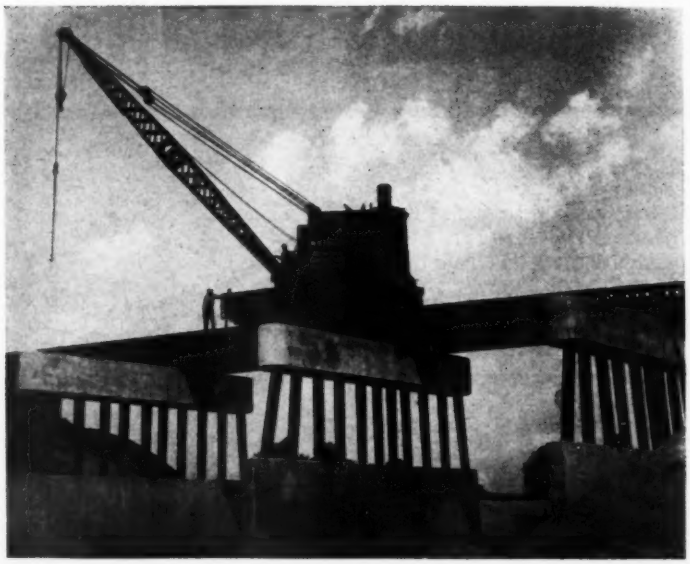
Armco Drainage & Metal Products, Inc.
4287 Curtis Street, Middletown, Ohio

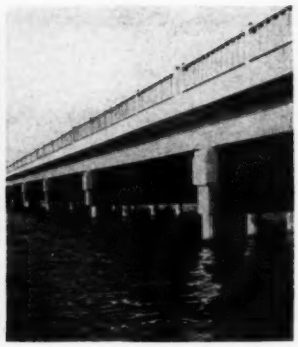
☐ Send me Folder 11856 on Armco Steel Buildings for Railroads
☐ Send me prices, more information on an Armco Steel Building for the following use_____
Approximate sizes_____

NAME_____ TITLE_____
RAILROAD_____
STREET_____
CITY_____ ZONE___ STATE_____

WITH Monotube Foundation Piles

...BIG SAVINGS IN BRIDGE CONSTRUCTION





WHEN you specify Monotube foundation piles for highway or railroad bridge construction . . . jobs go faster, costs stay low.

The tapered, fluted design of steel Monotube piles means faster driving. Monotubes are easier to handle and transport because of rigid, light weight construction. There's no need for special rigs or heavy driving equipment.

With a simple, single weld, Monotubes are readily extended to any required length, right on-the-job. Cut-offs can be used as extensions to eliminate waste. Monotubes are cold-rolled for added strength and long life.

Before starting that next foundation job, whatever or wherever it may be, remember, Monotube piles offer you specific advantages that pay off in sound construction and unusual economy. Write today for your copy of Catalog No. 81. Address The Union Metal Manufacturing Company, Canton 5, Ohio.

Monotube Foundation Piles

UNION METAL

After flood damage on an Eastern line, 7 Koehring RailAids salvaged freight, speeded track clean-up and repairs to re-establish main-line service. Where track was blocked, the RailAids detoured along high ground — traveled, worked off-car.

ON-TRACK . . . OFF-TRACK
in less than 10 minutes

Wherever there's excavating, lifting, or material-handling to be done, Koehring RailAid takes to the rails — travels on-track from one work-section to the next at speeds up to 20 m.p.h. It's self-propelled, powers its own rail car — does 2 to 3 times the work of other excavators or cranes that have to crawl or be hauled from job to job.

At the same time, you get full flexibility for working on or off-track. Koehring 205 loads or unloads itself on ramp-equipped car — sets car on or off-track. Entire operation takes less than 10 minutes!

As a crane, this Koehring 205 safely lifts 6.9 tons from the car — 8.9 tons on ground. Converts to clamshell, dragline, ½-yard shovel or hoe — cleans ditches, widens banks, stockpiles coal or ballast, loads or unloads cars, repairs trestles, lays rails, does pile-driving. Want all the facts? Send coupon today.

KOEHRING DIVISION of Koehring Company

Crane or excavator sets the rail car on or off-track, clears the right-of-way for through traffic. Ramp-equipped propulsion car has 2-axle-drive, with air brakes on all 4 standard-flange wheels. Car-well accommodates 16, 20 or 24-in. crawlers on the Koehring heavy-duty 205. Torque converter gives smooth, positive control of rail travel speeds from 0 to 20 m.p.h.

mail today . . . . . .

KOEHRING DIVISION, 3026 W. Concordia Milwaukee 16, Wis.

Send for free bulletin on Koehring 205 RailAid

NAME_____

TITLE_____

COMPANY_____

DIVISION_____

STREET_____

CITY, STATE_____

K781 RTS

KOEHRING (KOEHRING HEAVY DUTY) **RailAid**

"Chipman weed killers do such a good job, I decided to use some around our estate!"

Chipman chemicals and application service are backed by 45 years of railroad experience. An extensive line of weed, grass and brush killers is available to meet varying conditions. Included are:

Atlacide	Chlorea	Brush Killer
Atlas "A"	Chlorax	Telvar W
Atlas "D"	TCA	Borax

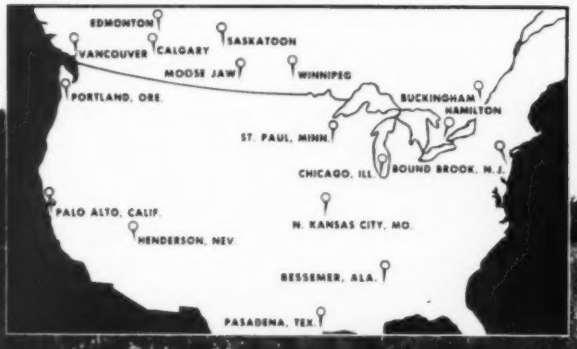
Let us solve *your* weed problems with the *right* chemicals and application service!

CHIPMAN

Chemical Company, Inc.

Bound Brook, New Jersey

17 Strategically Located Chipman Plants



SAVE #4.13 per tie 15 YEARS X 35¢

2 | 1.12

Prove for yourself...how

BIRD

Self-Sealing Tie Pads

Reduce Your Cross Tie Costs

59%

Unretouched photograph shows cross-section of tie protected for 10 years by Bird Self-Sealing Tie Pads. Sound condition of underplate and spike-hole areas shows that destructive moisture and abrasive materials did not penetrate the seal.

HERE'S HOW TO PROVE for yourself that Bird Self-Sealing Tie Pads reduce cross tie costs 59%: The average installed cost of a new main line cross tie, including cost of original tie plus labor, is $7.00*. With a normal life of 20 years, this amounts to 35¢ per year.

Actual in-track installations *prove* that Bird Self-Sealing Tie Pads increase the life of the average tie by at least 15 years. At 35¢ per year, this saving amounts to $5.25. The approximate cost of obtaining this saving is $1.12 — for two 7¾" x 12" Bird Self-Sealing Tie Pads. *Net saving is $4.13 — or 59% of the installed cost of the original tie.*

Bird Self-Sealing Tie Pads completely and permanently seal out moisture and abrasive materials from underplate and spike-hole areas. In addition to savings in tie wear and deterioration, you reduce irregular gauge and inadequate tie plate bearing.

Use Bird Self-Sealing Tie Pads — and reduce your cross tie costs 59%! For complete information write to Bird Tie Pads, Dept. HTS, East Walpole, Mass.

**These figures represent the most conservative minimum. If your costs are higher, savings are proportionately higher.*

BIRD SELF-SEALING TIE PADS ARE RECOMMENDED FOR:

Bridge Decks • Curves • Switch Timbers
Highway Grade Crossings and Other
Paved Areas • Crossing Frogs
Insulated Joints • With Smaller Tie Plates
Pile Cutoffs • Through Station Platforms
Out-of-Face Installations in Rail-Laying
Programs • All other locations where
tie life is short or replacement costs are high.

Buy the Best... BIRD & SON inc. Established 1795 *Buy BIRD*

Subject:

Dear Readers:

RAILWAY

TRACK and STRUCTURES

No "Party Line" Here

There are two situations that are frequently encountered by every supervisory officer from chief engineer to section foreman. The manner in which you react to them is a matter of considerable importance to you and to your railroad. Here they are:

(1) On discussing a new policy or decision with a subordinate you find he is either not receptive or is categorically opposed to the idea. What is your reaction? Do you listen to his side of the question? Do you endeavor to win him to your way of thinking by reason and logic? Or do you, in effect, brush aside his protestations with remarks that give the impression you are not interested in what he thinks?

(2) On discussing a new policy or decision with a superior you find the shoe is on the other foot. In other words you are opposed to the idea, or to some part of it. What do you do in that case? Do you state your views in an effort to bring about a reversal or modification of the decision? Or do you accept it passively with the attitude that the responsibility for the results will rest on his shoulders and not yours?

As an example of where extreme views are taken in situations of this sort we can cite an organization that represents the exact opposite of our American way of life—the communist party. Policies of the communists are known as the "party line." These policies, made by a small group of men in the Kremlin, immediately become law to every party member. They are transmitted to him without explanation and he follows them automatically. He is obliged to follow the "party line" regardless of what his own ideas may be.

Under our system of government we abhor repression of individual thought. We hold that freedom of expression, of thought and of action within the law is the birthright of the individual, and that only by the exercise of that freedom can we attain any real measure of happiness and contentment.

We speak of these things as being the right of the individual under our system of government. He can worship as he pleases. He can join whatever accepted political party suits his fancy. He may change jobs if he wishes. But it's important to raise this question: Does he have the same right to express himself about company policy when he is functioning as an employee of a business enterprise?

Of course he does, you say. And you're probably right, up to a point. But we suspect there are many supervisory officers who will admit they are reluctant to express openly a view that is contrary to a policy laid down by a superior or a group of superiors. In other words, they feel impelled to follow the "party line" although they may feel it is unwise or contrary to the best interests of the company.

If the railroads are to make continuous progress in the adoption of new and better maintenance methods and machines, it seems to us that all supervisory officers have these two related responsibilities: (1) To encourage subordinates to express themselves fully concerning proposed changes in policy or practice; and (2) to reserve to themselves the right to express their own views concerning decisions handed down to them from superiors.

MHD

LIFT, STACK, LOAD, DIG WITH

one man operation P&H WAGON CRANE

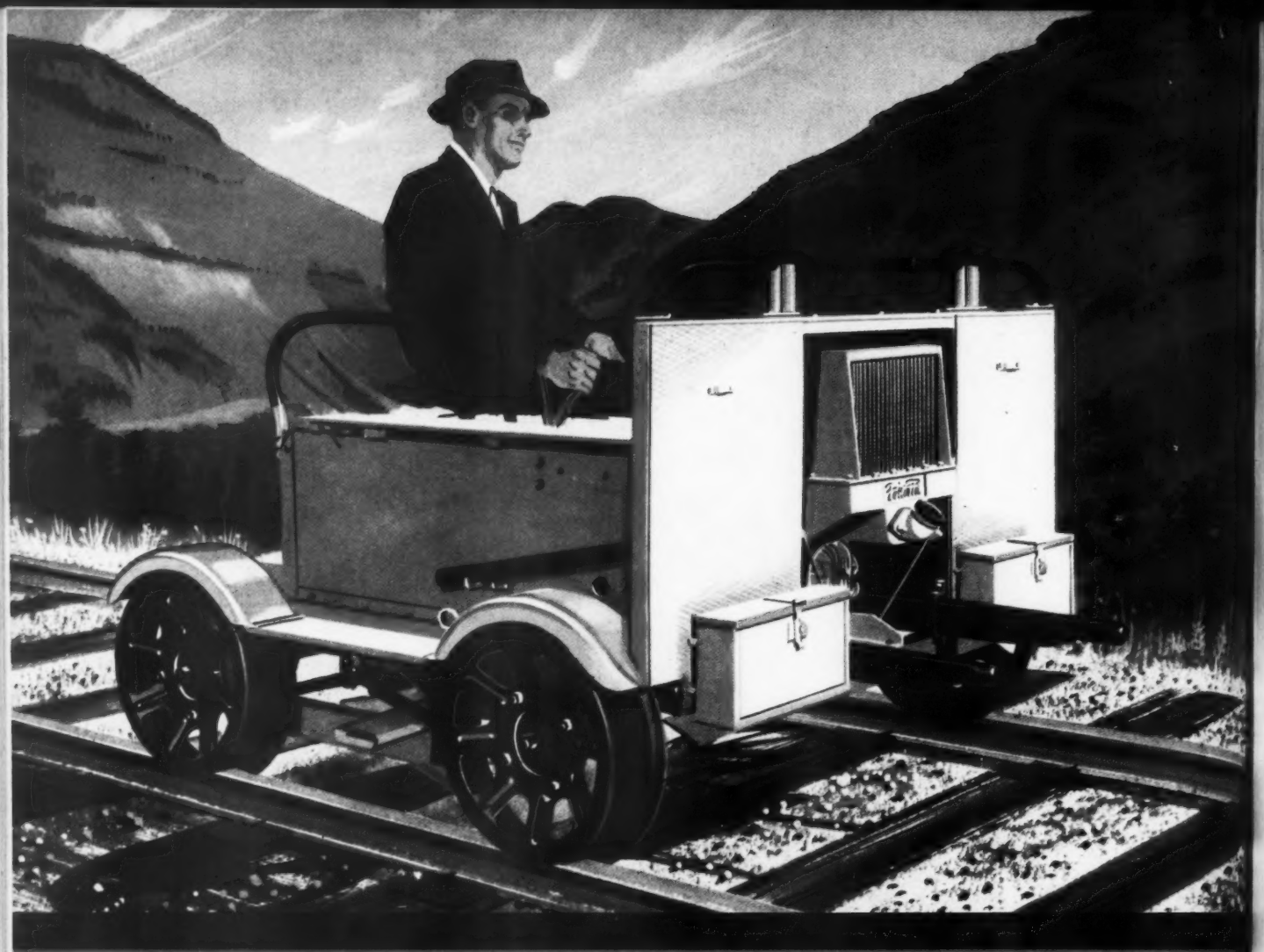
The 10 ton, self-propelled P&H Model 155 Wagon Crane keeps your work up to schedule and holds down costs. One man can handle a variety of jobs using the P&H Wagon Crane for lifting, for digging with clamshell and for handling scrap with magnet.

It will pay you to compare this 10 ton P&H Wagon Crane with any other make before you buy! Check these profitable performance features: power box design with all parts running in oil bath and antifriction bearings throughout . . . 10 m.p.h. rubber tire, 2-axle mobility . . . 20,000 lbs. capacity at 10′ radius with 25′ boom . . . travel, swing, lift or boom independently or simultaneously with *full* loads at *full* 360° . . . smooth, fast, lively swings . . . short turning radius, full circle visibility and easy positioning for handling work in close quarters.

The P&H 155-WC is powered by a gas engine or P&H Diesel. See your P&H dealer. Write for Bulletin X-187.

HARNISCHFEGER

Construction & Mining Division
Milwaukee 46, Wisconsin



When you think of

INSPECTION CARS

. . . think first of **Fairmont**

Shown above: **M19 SERIES AA** One- to Four-Man Inspection Car offers a new two-cylinder Fairmont engine, demountable wheels and four-wheel braking. Soundly engineered and soundly built, this vehicle provides a load capacity of 750 lbs.

M19 SERIES F One- to Four-Man Inspection Car employs a 5- to 8-horsepower roller bearing engine, a new engine stabilizer and four-wheel braking. Like all Fairmont products, it offers great dependability and economy.

M9 SERIES G One- to Two-Man Inspection Car features an efficient roller bearing engine, enclosed housing and adjustable lift handles. Only 540 lbs. in weight, it offers unusually high standards of performance.

MR19 SERIES A One- to Four-Man Inspection Car provides two-way drive, four-wheel braking, enclosed housing and a 5- to 8-horsepower engine. Performance characteristics include unusual safety and maneuverability.

Among the equipment on this page there is almost certainly the answer to your inspection requirements. Built to the high-quality standards and embodying the fine design and sound engineering that have made Fairmont famous the world over, this equipment is without equal in its field. All feature easy engine access . . . long-wearing, quickly adjustable brakes . . . spring mounting . . . and safe, dependable power. Whether it's daily inspection trips . . . track patrol . . . signal and telegraph maintenance . . . or supervisor's service, there is a Fairmont unit that will do the job better and more efficiently.

FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINNESOTA

MANUFACTURERS OF INSPECTION, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, BALLAST MAINTENANCE CARS, DERRICK CARS, OIL SPRAY CARS GROUTING OUTFITS, TIE RENEWAL EQUIPMENT, RAIL RENEWAL EQUIPMENT, WEED CONTROL EQUIPMENT.

Published monthly by the

SIMMONS-BOARDMAN PUBLISHING CORPORATION

79 West Monroe St., Chicago 3

•

New York 7,
30 Church Street

Washington 4, D. C.
1081 National Press Bldg.

Cleveland 13,
Terminal Tower

Atlanta 9, Ga.
22 Eighth Street, N.E.

Portland 5, Ore.
835 Terminal Sales Bldg.

San Francisco 4,
244 California Street

Los Angeles 17,
1151 West Sixth Street

Dallas 19,
3908 Lemmon Ave.

Foreign Representatives

Sibley-Field Publishing Company Ltd.
103, Newgate Street
London E.C. 1, England

Linder Presse Union GMBH
Georg J. Linder
Continental European Representative
(16) Frankfurt a.Main
Wittlesbacher Allee 60,
West Germany

•

James G. Lyne, President, Samuel O. Dunn, Chairman Emeritus, Fred A. Clark, Vice-President and Secretary. Harry H. Melville, C. W. Merriken, John R. Thompson, John S. Vreeland, Robert G. Lewis, M. H. Dick, Vice Presidents. Arthur J. McGinnis, Executive Vice-President and Treasurer. Michael J. Figa, Jr., Director of Production. John Gavora, Jr., Assistant Treasurer.

•

Subscription price to railroad employees only in the U.S., U.S. possessions and Canada, $2.00 one year, $3 two years, payable in advance and postage free. All other countries, $8 one year, $16 two years. Single copies 50¢. Address correspondence concerning subscriptions to R. C. VanNess, director of circulation, 30 Church Street, New York 7.

•

Member of the Associated Business Papers (A.B.P.) and of the Audit Bureau of Circulations (A.B.C.) and is indexed by Engineering Index, Inc.

PRINTED IN U.S.A.

RAILWAY

TRACK and STRUCTURES

APRIL, 1957 **Vol. 53, No. 4**

News Notes 15

A resumé of current events throughout the railroad world, prepared at press time by the *RT&S* staff.

"Dear Readers" 34

Is it not true that many good ideas fall by the wayside—in fact are never even expressed—because they do not reflect "established policy?"

AREA: What Happened at St. Louis 39

A run-down of what went on at the convention with a "guided tour" of events by the *RT&S* photographer.

Long Life from Gum Ties 44

H. G. Carter, retired chief engineer of the Central of Georgia, gives results of an investigation into treatment, handling and life of this wood.

Something New in Platform Shelters 46

Long steel tubes and prestressed concrete panels provide a unique structure for the Swiss Federal Railways.

Pole Building for Car Shelter 48

Speed of construction, low cost and durability—these are the benefits claimed by pole construction—featured in recently built shed.

New Oil from Old at Half Cost 49

With an efficient method, the correct equipment and quality control, the Frisco is getting "good-as-new" reconditioned lubricating oil.

How to Make a Dual Drill for Cropped Rail 51

Ingenuity pays off on the Western Pacific where they've developed a fast, sure method for drilling bolt holes.

News Briefs in Pictures 52

Protected concrete piles—Power Ballaster for subway use—New NYC lift bridge—Conveyor ramp replaces stairs.

What's the Answer 53

Lining turnout rails—Installing high-strength bolts—Safety in ballast unloading—Water in oil-storage tanks—Reuse of old ties.

Products of the Manufacturers 58

News of the Month 66

Helps from the Manufacturers 80

MERWIN H. DICK
Editor

R. E. DOVE
Associate Editor

ROBERT G. LEWIS
Publisher

RALPH M. SCHMIDL
Associate Editor

LILLIAN L. WATERS
Editorial Assistant

STAY ON SCHEDULE

with off-track equipment . . .

Torque Converter Drive...automatically matches power and speed to changing load conditions.

One-piece Steering Clutch and Final Drive Housing . . . resists twists and shocks, permits line boring for accurate shaft and gear alignment.

Double Reduction Final Drives with Straddle-Mounted Gears . . . for increased ground clearance, longer gear life.

Positive Seal Truck Wheels, Idlers and Support Rollers . . . require lubrication only once every 1,000 hours.

24-volt Direct Electric Starting . . . offers fast-action starts on diesel fuel.

Hydraulic Steering Controls . . . furnish quick response, simple operation.

Design advantages like these provide the power and versatility, ease of operation and simplified servicing for high output performance at low cost. Choose the right crawler tractor to fit your jobs from the complete Allis-Chalmers line—72-hp HD-6, 111-hp HD-11, 150-hp HD-16 and 204-hp HD-21. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wis.

ALLIS-CHALMERS *Engineering in Action*

PRESIDENT Wm. J. Hedley (Wabash) directed the sessions.

The AREA convention was held at the Sheraton-Jefferson Hotel, St. Louis, on March 4-6. Who was there? What did they do besides listen to reports and addresses? There isn't space for a complete story but the pictures on these pages give a pretty good idea of . . .

. . . What Happened at St. Louis

GATHERING PLACE—AREA members and guests "took over" the hotel's main lobby and mezzanine level.

Start here to see the convention with the RT&S camera . . .

"What's the registration?"

"I don't know exactly, but there's sure a lot of people around here. Must be pretty good."

This conversation, or variations of it, was repeated countless times during the AREA convention at St. Louis early in March.

It was to be expected that the members would express more than the usual amount of interest in the registration. For the first time since it had come into existence the association was holding its convention away from Chicago. What effect would the shift to St. Louis have on the attendance? Would the facilities at the convention hotel—the Sheraton-Jefferson — be adequate? How would the members feel about a situation which required more than the usual num-

. . . and then turn the page

SIGNING IN—A. V. Johnston (foreground), CNR; and R. J. Moe, Jackson Vibrators, fill out registration cards.

REGISTERING—Slight traffic jam occurs at registration desk as members wait to get their identification badges.

RT&S 'coffee bar' was favorite place for starting the day . . .

2,000 cups of coffee . . .

. . . were consumed by AREA members and guests at the *Railway Track and Structures* Breakfast Bar in the North room of the Jefferson hotel. Further sustenance was gained by conventioneers as they downed 820 glasses of fruit juice, 830 sweet rolls and 180 doughnuts.

FAMILY AFFAIR—Ralph H. Bogle, Jr., and John B. Bogle of the R. H. Bogle Co.

COFFEE AND TALK—G. G. Grove, PRR; and M. S. Westlund, Jackson Vibrators.

WHAT'S NEXT—John W. Miller, J. J. Mincher, both TRRA; M. D. Carothers, GM&O; and T. J. Moore, True Temper.

PRR PEOPLE—F. N. White, James M. Rankin, J. P. Garrett, and L. E. Ward, all representatives of the Pennsylvania.

FILL 'EM UP—J. W. Crossett, *RT&S*, pours for J. P. Gannon, W. B. Peterson, Soo line; H. R. Peterson, NP; L. V. Johnson, Soo Line.

PARDON US—J. R. Thompson, *RT&S*; J. W. Christoff, R. Ellefson, both Mannix Inter'l; Blair Blowers, Jr., Railroad Materials Corp.

LADIES TOO—Mr. & Mrs. G. W. Miller, CPR.

QUIET CORNER—H. F. Longheld, IC; C. A. Bick, Monon; and C. I. Van Arsdalen, IC.

SOI—H. E. Minteer, Milw.; Donald Hughes, Mich. P.S.C.; S. Thorvaldson, LS&I; S. M. Dahl, Milw.

ber to be quartered at other hotels?

The total registration may give, in part at least, an answer to these questions. The final count after the last few stragglers had signed in on Wednesday, March 6, was 1803, including members and guests. This compares with a total of 2092 at the 1956 meeting, held at the Palmer House, Chicago.

There were few who were willing to speculate on the reason—or reasons—for the moderate decline. Several observers thought that it could be accounted for in part by the fact that there was—in St. Louis as compared with Chicago—a smaller reservoir of local visitors to fatten up the registration. Others pointed out that representatives of supply companies made up a smaller than usual proportion of the total. There was also speculation that a decline might even have occurred if the meeting had been held in Chicago.

What did those present think about the St. Louis meeting? Judging by random comments, they were, as a whole, well pleased with the location, the facilities and the arrangements. Complaints of any

. . . but afterward there were those who had duties to perform . . .

HOW MANY?—R. E. Dove, *RT&S;* and Lee Mayfield, MP, kept a count of the registration.

QUESTIONS?—E. M. Hastings, Jr. C&O; G. P. Palmer, B&OCT (ret.), at information desk.

GREETER—J. M. Giles, Caterpillar; and W. E. Gardner, Wabash.

STAFF CONFERENCE—E. G. Gehrke, asst. sec.; N. D. Howard, exec. sec.; N. E. Engman, asst. to sec.; and Nancy Campbell, all AREA.

TELLERS—They were counting the ballots cast by members in the election of officers. For results see page 43.

$3.25 PLEASE—L. A. Loggins (foreground), SP Lines; and M. S. Reid, C&NW, buy tickets for committee luncheon.

RECEIVING LINE—G. M. O'Rourke, IC.; R. R. Manion, NYC; and F. R. Woolford, WP, wait hopefully at elevators.

kind were conspicuous by their absence.

The program itself followed the usual pattern of committee reports and addresses. As for organized social activity, there was the annual luncheon and one other event—a dinner party—but the latter was sponsored by the Mississippi Valley Maintenance of Way Club.

Presentation of the committee reports proceeded with the usual clock-like precision, with a minimum of discussion from the floor. However, this even tenor of events was interrupted several times, and particularly on two occasions—once during a panel discussion on the use of ties in track, and another time in connection with the report of the committee on Maintenance of Way Work Equipment.

In the first instance, T. A. Blair, system chief engineer, Santa Fe, speaking from the floor, observed that tie renewals on the Union Pacific appeared to be somewhat lower per mile than on some "neighboring" lines, and he wondered why. He directed his question to L. P. Drew, assistant chief engineer of the UP, who was serving as a member of the panel.

. . . while still others, when not listening to the proceedings, . . .

MUST BE GOOD—H. M. MacFarlane, Cullen-Friestedt; H. A. Thyng, B&M.

WHOSE JOKE?—Ray T. Johnson, Jr., Midwest Forg'g; C. R. Merriman, CSS&SB.

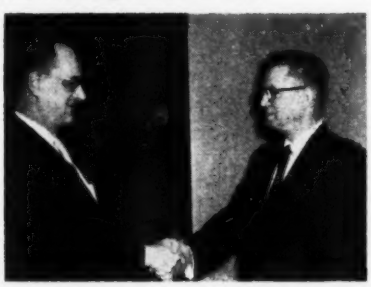
HOLD IT!—Lee Spencer, Long Island (retired), and C. L. Towle, DT&I.

FRIENDLY CHAT—W. H. Woodings, Woodings-Verona; L. T. Burwell, Rails Company; and J. E. K. Krylow, PRR.

SHAKE!—James N. Roche, Koppers Company; Herman E. Kirby, C&O; and Carl Wingerson, Pittsburgh Screw & Bolt.

FROM THE SOUTH—C. E. Webb and J. W. Fulmer, both of the Southern.

YOU DON'T SAY?—S. M. Boyes, American RR Curvelining; and C. E. Weller, IC.



EAST MEETS WEST—Wendell Wilson, Santa Fe; and W. E. Kropp, LV.

AT THE BRIDGE—V. C. Hanna, TRRA, stands before scale model of Eads bridge. Model was built by TRRA bridge forces.

AUDIENCE—D. E. Rudisill and K. J. Silvey, both PRR, are interested listeners as George O'Rourke, IC, speaks.

Several possible explanations were considered. Could the answer lie in the fact that the UP uses district gangs to put in a sizable portion of its crossties? Hardly. Would the fact that the UP has high standards of track construction have a bearing on the question? Not necessarily, because some of the "neighboring" lines have similar standards.

Still another theory was offered by H. R. Duncan, the Burlington's superintendent of timber preservation. He observed that the UP was putting in zinc-chloride treated ties until the late Twenties when it switched to creosote. In that case, he reasoned, the UP would now be in the trough of its tie-renewal cycle, whereas on other lines that began using creosoted ties earlier, annual tie renewals have now become relatively uniform. It would be logical to expect, he said, that tie renewals on the UP would show an uptrend some time in the future.

The flurry of discussion that took place during the report of Maintenance of Way Work Equipment committee was started by G. M. Magee, the AAR's director of engineering research. He wondered

. . . sought out old friends, made new ones, 'talked shop' and . . .

WELL?—W. P. Geiser, Ry. Ballast Conditioning Corp., W. E. Gadd, Rail Joint Co.

NOTE TAKER—Don V. Wigal, Santa Fe; and R. D. Igou, CRI&P.

PAD TALK?—C. J. Code, PRR; and A. A. Cross, Bird & Son, Inc.

PUBLISHER—R. G. Lewis, *RT&S;* and Joseph W. Bray, Osmose Wood Pres. Co.

BRIDGE MEN—C. A. Roberts, Erie, and G. W. Benson, C of Ga.

PRESIDENTS—J. E. Griffith (SOU). Rdms. Assn.; R. R. Gunderson (WM), B&B.

WHAT'S THE NEWS—C. H. Mottier, IC, and W. P. Colton, M&StL.

RT&S READER—A. S. Krefting, Soo Line, looks through March issue.

. . . elected these new officers

ADVICE—Ray McBrian, pres.-elect, and B. R. Meyers, senior vice-pres., offer counsel to . . .

. . . F. R. WOOLFORD, who was elected junior vice-pres.

President, Ray McBrian, director of research, D&RGW, Denver; vice-president to serve two years, F. R. Woolford, chief engineer, WP, San Francisco. B. R. Meyers, chief engineer, C&NW, and junior vice-president of the association, was automatically advanced to senior vice-president.

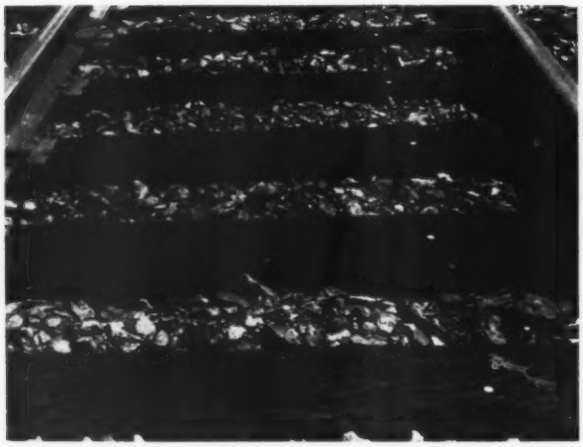
The directors elected are: A. V. Johnston, chief engineer, CNR, Montreal; W. H. Hobbs, chief engineer, MP, St. Louis; A. B. Stone, chief engineer, N&W, Roanoke, Va.; and J. C. Jacobs, engineer maintenance of way, IC, Chicago.

Members of the Nominating Committee are: T. M. Von Sprecken, assistant to chief engineer, Southern, Washington; T. F. Burris, chief engineer, system, C&O, Huntington, W. Va.; J. A. Bunjer, chief engineer, UP, Omaha; F. L. Etchison, chief engineer, WM, Baltimore; and W. D. Kirkpatrick, asst. to ch. eng'r, MP, St. Louis.

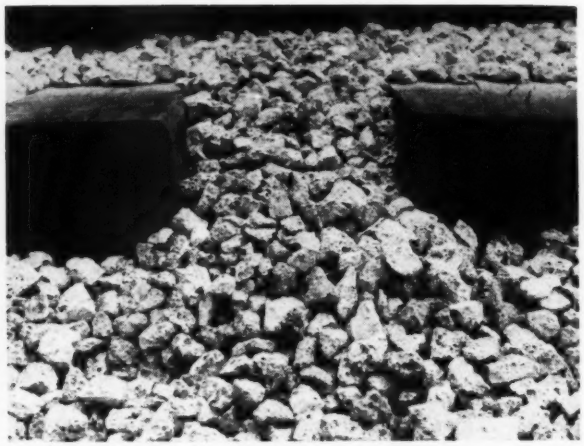
why names of manufacturers were not used in the committee's reports when describing new equipment, improvements in existing machines and, particularly, in the manual on the maintenance of work equipment. Trade names are used in research reports prepared by his organization, said Mr. Magee, and also in reports of some of the other committees. He doesn't believe any legal problems are involved. The machines in the Work Equipment report are described in such detail that there is little doubt as to the make—so why not give the name of the manufacturer?

A. W. Munt, chairman of the committee, who is supervisor of work equipment of the Canadian Pacific, explained that trade names were left out of the committee's reports in accordance with established AREA practice. The reason, he said, is to avoid giving the impression the association is endorsing the equipment.

The sessions of the convention were directed by President Wm. J. Hedley (chief engineer, Wabash), assisted by Vice-Presidents Ray McBrian and B. R. Meyers, and Executive Secretary N. D. Howard.



INCISED gum ties, properly seasoned and handled, have some definite advantages over other species of wood.



HEARTWOOD gum ties, such as those shown here, are incised to gain greater penetration of the preservative.

How railroads can get...

...Long Life From Gum Ties...

...through proper handling, seasoning and treatment.

By H. G. Carter
Chief Engineer, Retired
Central of Georgia

"Since purchases of gum crossties now represent some 57 per cent of total crosstie purchases, I felt an investigation into the proper handling and treatment of this wood and the life expectancy of such ties would be of value. Accordingly, I made a survey of 22 railroads requesting information as to their experiences with gum ties. The reports received from the chief engineers of these roads constitute the basis of the observations which are set forth in this article."

• Early experiences with gum crossties were frequently unsatisfactory and resulted in a prejudice towards this species in the minds of some users.

Closer investigation, however, develops the fact that when gum ties were first used, little was known of the care which must be used in their seasoning. The producer was allowed to "dead stack" the ties while accumulating an order. When received at the seasoning yard, the gum was sometimes stacked for air seasoning with the oak. Such a procedure gave most unsatisfactory results due to the decided difference in time required for seasoning the two species. Whereas oak requires from 10 to 14 months to properly air season, gum ties require only from 4 to 6 months. In the early experiences the stack was left until the oak was dried sufficiently for preservative treatment. By that time decay had usually attacked the gum. Also, a large percentage of hewn ties was cut by individual or seasonal producers and left on the ground while a sufficient quantity was accumulated for hauling. This often resulted in incipient decay before the ties were stacked.

Gum ties should never be dead-stacked, but, when cut, should be shipped to the seasoning location immediately. They must be placed in well-ventilated stacks on clean, dry seasoning yards and each stack of gum ties dated so that they can be readily identified as to seasoning age. Some producers prefer to paint the contact points in the stack to prevent burning. This does not seem to be necessary, however, provided proper handling and stacking methods are observed. The main thing is to allow plenty of air space for ventilation.

A gum tie should be treated promptly after becoming dry enough for treatment. There is not as much tolerance in treating time with dry gum ties as there is with oak. Gum ties will give satisfactory results if they are properly handled from the time they are cut until the tie is treated with the preservative.

Some objection is voiced to gum ties checking. But, it is generally conceded that the check pattern can be controlled by incising, which produces a number of small checks to relieve the stresses resulting from drying. Incising also increases the depth of penetration of the preservative. Whereas heart gum can be penetrated to a depth only 1/16 in to ¼ in without incising, it can be penetrated to ⅝ in (or depth of incision) if incised.

In speaking of heartwood there seems to be a misunderstanding on the part of some who say the difficulty of penetrating heartwood with oily preservatives is due to the high moisture content. Actually it is due primarily to the recalcitrant nature of the wood.

Some engineers state they prefer gum ties cut in the winter months

What They Say About Gum Ties

Some of the comments received by Mr. Carter from chief engineers.

"I feel that red gum has suffered from a prejudice developed from experiences years ago when the seasoning and the treatment of crossties were not as well understood as they are at the present day . . . The incising alone will reduce the checking and splitting to a negligible amount, and I know that the incising will permit a greater penetration of the preservative."

•

"The gum ties, especially the sweet gum, have to be watched constantly while producing ties to insure that the cut logs are not allowed to be piled up too long in the woods before going to the saw mills to be cut into crossties. The ties, in turn, must also be watched so that they are not piled up together too long before being properly stacked in the concentrating yards in preparation for being shipped to the seasoning yards at the plants."

•

"We make it a practice to unload the green gum ties from the cars as soon as they reach the treating plants so that the ties will not lie tightly stacked in the cars too long. We have experienced some mold on the gum ties after shipment when the ties have been in wet weather and then hot weather while loaded in cars, but when they are unloaded immediately and stacked properly we have noted no serious damage from this mold."

•

"Different methods are now being used and it is our belief that the service life of gum ties can be greatly lengthened by proper handling, seasoning and treatment."

•

"We do think that gum ties properly seasoned make an excellent tie and in some respects have definite advantages over other species of timber."

•

"We think it very desirable that some quick seasoning method be used for gum ties such as Vapor Drying or Controlled Air Seasoning. Ties should be put through the quick seasoning process as soon as possible after cutting."

•

"It has been our experience that gum ties in the southern areas of our railroad stand up better than some of the oak ties, while in the northern areas, the oak ties last longer than the gum ties."

"while the sap is down." The sap in living timber is virtually constant throughout the seasons. There may have been some basis in the past for preferring winter-cut wood, since in cold weather the decay organisms are less active than in the warm months. Therefore, it may be expected that the fungi which infect winter-cut timber may lie dormant during the initial drying period. There can be no justification for this theory at present, however, since modern production methods, separate stacking, and modern, clean and dry seasoning yards all combine to eliminate the practices which were responsible for many failure of gum ties in the past. In addition to better handling, air-seasoning, and the treating methods mentioned, a further improvement has been effected by the modern artificial seasoning methods which have been introduced in recent years. These methods make it possible to season gum ties in a matter of a few days or even hours.

Modern Seasoning Methods

Green ties move from the woods to the treating plants within a week after cutting. At the plants they are incised and immediately placed in the drying units, from which they shortly emerge ready for adzing, boring and treatment. In some cases adzing and boring is done before drying; in one of the artificial drying methods the ties are treated in the cylinder in which they are dried.

The two presently commercial artificial drying methods are Controlled-Air-Seasoning and Vapor Drying. The former requires about 18 days and makes use of large volumes of moderately heated air. The second method requires about 15 hours and makes use of oil vapors at a high temperature. Each method claims its separate merits.

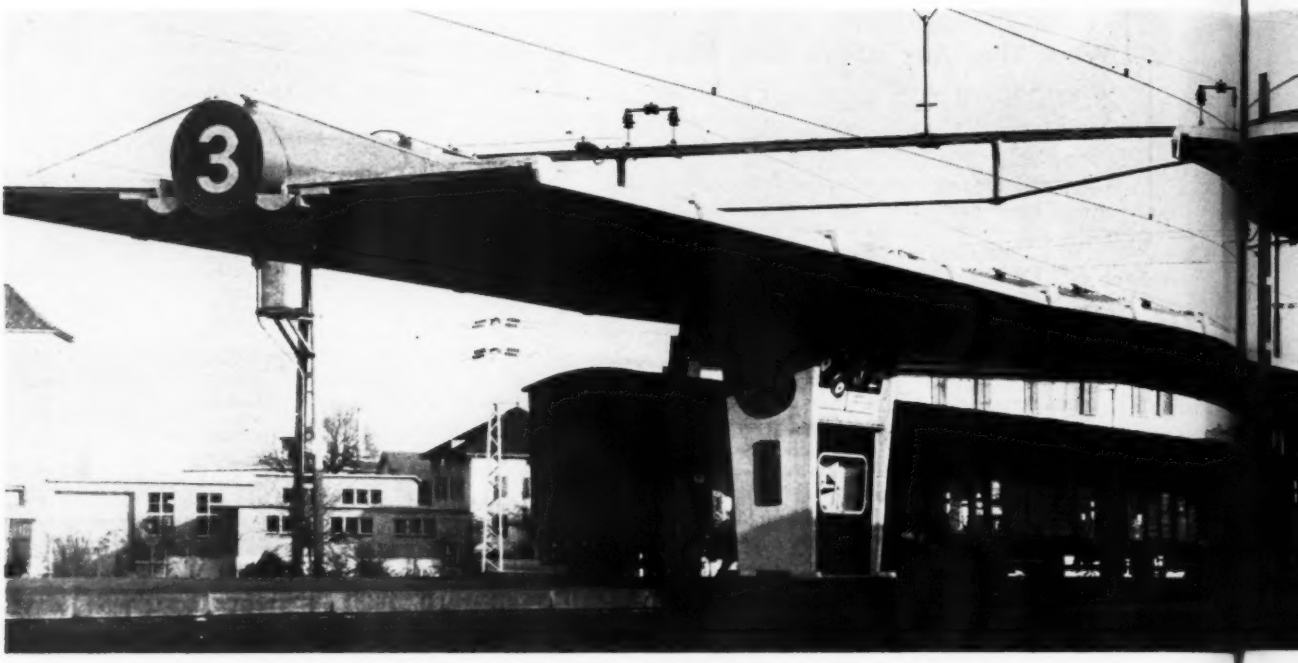
In addition to making possible rapid drying of the ties, both methods also sterilize the ties during the drying period. Whether this is of great importance is a moot question and one open to argument, but in any event it may be considered as an added advantage of the artificial seasoning methods.

In the report of AREA Committee 17, Wood Preservation, AREA Bulletin, Vol 57, No. 526, December 1955, a record of some test track ties is given. These test tracks included oak, gum and pine ties installed from 1907 through 1914. There were approximately 35,000 oak and 15,000 gum ties in this test and they were installed in Iowa, Kansas, Missouri, Texas and Arkansas. The record shows gum tie life about the same overall average as oak and further shows a remarkable percentage of the ties still in service after from 41 to 48 years.

Gum timber is very susceptible to attack by fungi which produce decay. Ties of this species must be handled with special care. They must be shipped to seasoning points immediately after cutting. Seasoning yards should be on high ground and kept dry and free of vegetation. Ties must be stacked to themselves, in well ventilated stacks. It is advisable to incise the green ties before seasoning since this sets a better pattern of seasoning checks than is obtained if incising follows seasoning. Ties must be carefully watched during seasoning and given a treatment of preservative promptly after proper seasoning. Artificial drying methods are advantageous in reducing the length of the seasoning period and in avoiding the possibility of infection during seasoning.

Where ties are to be air seasoned, too much emphasis cannot be placed on care in providing clean, sterile, well-drained seasoning yards and getting ties to these yards promptly after cutting. The cost of providing these facilities, although reflected in the cost of the finished product, is well worth while, as it will result in longer life for the crosstie.

With proper care through the seasoning period and proper preservative treatment, gum crossties will give as good service as ties of other species and should last from 20 to 35 years.



Steel tubes and concrete slabs combine to form . . .

Something New in Platform S

• A "new look" in station platform roofs has been advanced by the Swiss Federal Railways at their Winterthur-Grüze station. Expressing advanced ideas of design, the two new roofs are each supported by three portal-type pillars of reinforced concrete. From tubular steel girders spanning between the pillars are suspended prestressed concrete roof slabs which provide the shelter. The result is an extremely modern looking structure of high strength and durability. Here's how they were built:

The portal-type pillars which support each 295-ft long shelter are spaced about 108 ft apart. They are built in the form of small enclosures walled in by four reinforced concrete walls with additional concrete cross-stiffeners at their tops. The pillars, which taper inward slightly from the top, are used also to contain a variety of station accessories such as electrical and telecommunications equipment and cables, clocks, switchboards, telephones, etc. Some of the pillars contain letter boxes with coin-operated stamp dispensers, display windows and advertisements.

Each tubular steel girder—the "backbones" of the roof structures—is fabricated of 30 tube sections about 4 ft in inside diameter and about 10 ft in length. These sections are welded together, with stiffening rings at the welds, to make each 295-ft girder. Attached to each girder are two drain gutters with edge beams that act as purlins for the inner edges of the roof slabs.

Prestressed Slabs

The roof slabs are suspended from the girders by tubular steel rods which are attached to the outer edge of each slab. The slabs, shaped like interlocking tiles so as to provide rainproof joints, each cover an area of approximately 100 sq ft. Each rests, on one side, on the overhung portion of the preceding slab.

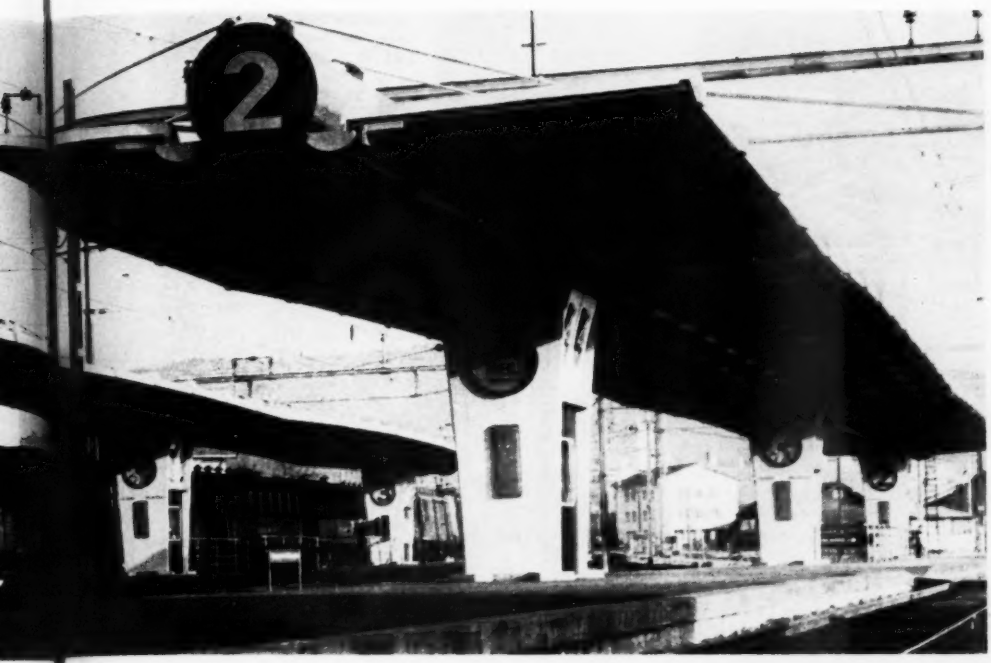
The prestressed reinforcement of the slabs is concentrated in a two-way system of ribs. The intermediate panels of each slab—indirectly stressed through the ribbing—are only 1.2 in thick. The tops of the slabs are impregnated with a silicon product to protect against frost.

The main tubular girders are completely accessible and are used as channels for all electric wiring. Fluorescent lighting, installed beneath the outer edge beams of the roof slabs, is connected by wiring fed through the tubular steel supporting rods to the main girder. All wiring, therefore, is completely enclosed.

Each of the main girders was prefabricated in five 59-ft lengths and transported by rail to the site. During erection these sections were temporarily bolted together and then welded after all sections were in position. The girders rest on fixed supports at the center pillars and on rocker supports at the end pillars. To facilitate the drainage of snow water, the main girders—and the entire roof structure—are raised slightly at the midpoints between the pillars.

One roof is straight; the other follows the curvature of a curved station platform. Erection of the girder for the curved roof took 15 hr; the girder for the straight roof was installed in 8½ hr. Work was done on Sundays when it was possible to obtain possession of one adjacent track.

The roof slabs were unloaded from feright cars by rail-mounted cranes. They were installed in three nights—in 4½ hr per night. Electric wiring was completed during the day. Two small mobile scaffolds were used to facilitate the installation work.

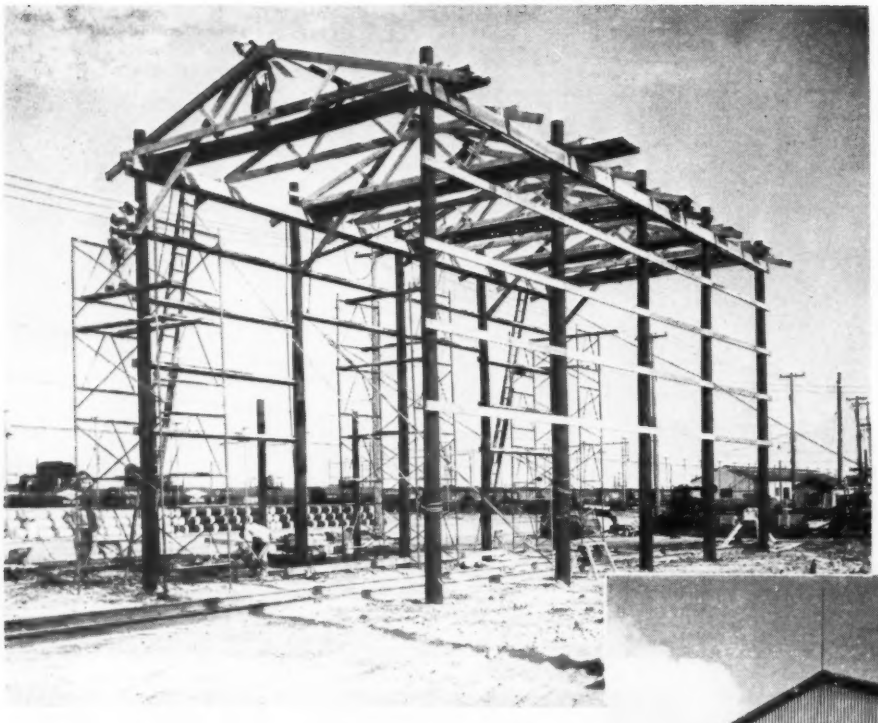


MODERN in appearance, new roofs are raised slightly between supporting pillars to facilitate drainage of snow water.

CONCRETE SLABS, prestressed and supported by tubular steel rods from the main tubular girders, form the roof. Wiring for fluorescent lights installed under slabs is carried through the tubular steel members.

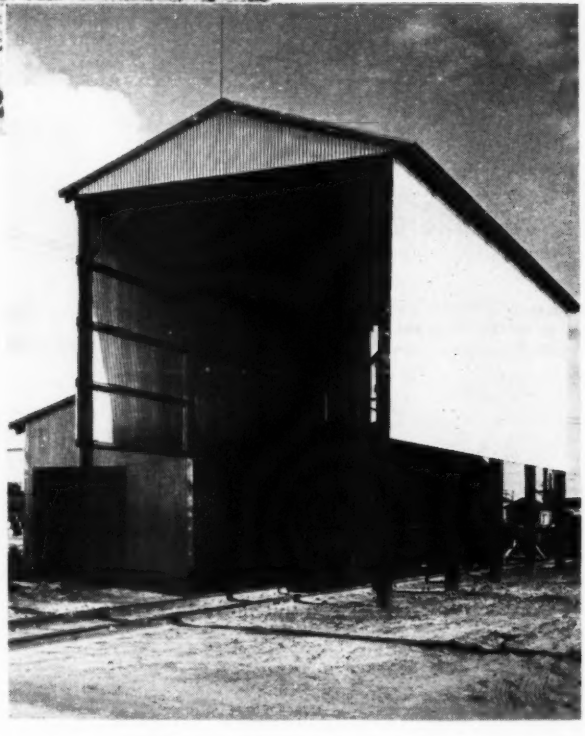
Shelters

ALMOST 4 FT in inside diameter, the main tubular girders were prefabricated in five sections, then welded together when in position.



FRAMEWORK goes up over service track. Main poles are 35 ft long.

FINISHED building has 14-ft by 24-ft heater house attached at one side.



Pole Building For Car Shelter

• Speed of construction, low cost, and durability—these were some of the factors taken into consideration when the Dow Chemical Company recently built a tank-car coating shed using pole-type construction. Pole-type buildings have been used for many years on farms; lately this mode of construction has found increasing acceptance in commercial building. Why not, then, in railroad buildings? Here's what the proponents of pole construction claim:

Cost is low. Low, that is, in comparison with conventional types of construction which incorporate concrete foundations or footings and expensive bracing, and which usually run up some pretty high labor costs. It has been estimated that pole-type warehouse buildings, for instance, can be put up for about $1.50 per sq ft including flooring.

The "extra" anchorage to the ground achieved by pole-type buildings is a factor in resisting wind loads. There is a considerable degree of flexibility in design. Comparatively simple and functional, the buildings can present an attractive appearance, either open or enclosed, using any of the wide variety of siding and roofing materials available today. The rigid framework, achieved with bracing and rafters fastened directly to the poles, contributes to the long life which may be obtained from such buildings. Interiors, too, may be finished as desired.

Needless to say, there are types of railroad buildings for which such construction would be impractical. But, there are many, such as small shops, storehouses, garages, small freight and passenger stations, yard offices, etc., which could employ this method of construction to advantage, according to its proponents.

The building constructed by the Dow Chemical Company and pictured on these pages, incorporated 10 Class 4 poles, 35 ft in length, and three Class 5 poles, 20 ft long. The structure was built to house an operation wherein tank cars are given various types of interior linings to prevent product contamination and corrosion. The main building is 20 ft wide by 50 ft long. Attached to the main structure is a 14-ft by 24-ft heater house, completely enclosed by the same corrugated aluminum siding which encloses the upper portions of the main building.

To assure long life, the poles used in the structure were Penta-treated.

Here's How the Frisco Gets

'New' Oil from Old at Half Cost

An efficient method, the proper equipment, and exacting control of the process give the Frisco reconditioned lubricating oil which is the equivalent of new oil. Originally submitted as an answer to a question posed in the "What's the Answer" columns of *RT&S*, this article was judged by the editors as worthy of more comprehensive treatment in view of its interest to railroad water and fuel service personnel.

By Max Herzog
Engineer of Tests
St. Louis-San Francisco

• The reconditioning of lubricating oil drained from diesel locomotives is, we believe, both practicable and well justified by economics. Practicable, because equipment and techniques are available to restore used oil to a condition equivalent to new oil; justified, because it can be done at a cost usually less than one-half the cost of new oil.

During engine operation, circulating crankcase oil is exposed to conditions which cause it to become contaminated with various undesirable substances. These include: Carbon, gum and light oils from breakdown of a portion of the lubricating oil; unburned fuel; dust entering with the air used to burn the fuel; metal worn or corroded from engine parts; and cooling water compounds entering the oil through water leaks. The oil deteriorates still further in service through loss of a considerable part of the heavy-duty additives present in new oil.

Reconditioning of crankcase oil drainings, therefore, involves removal of the contaminating impurities carried by the oil, and restoration of its original additive level.

Various systems for removing the contaminating substances in used diesel engine crankcase oil have been proposed. Our experience is that only a process such as the following can give acceptably clean and bright oil with low ash content. The oil must be treated with a mixture of activated clay and synthetic magnesium silicate to absorb and remove carbon, resins and metallic impurities. It must then be heated under vacuum to pull off water, fuel dilution and light oils. Finally, it needs to be filter pressed in order to remove the clay and silicate.

Treatment with acid is sometimes used and may facilitate the cleaning up of some brands of oil. However, acid treatment introduces a variety of additional problems and should be avoided whenever possible in a railroad operated facility. We have not found it necessary to resort to acid treatment in crankcase-oil reconditioning on the Frisco.

In the treatment outlined above, which amounts to a partial "re-refining" of the oil, all or a considerable portion of the additives are removed along with the impurities. If the reconditioning treatment were to be stopped at this point the result would be a straight mineral oil. To restore the oil to its original condition the additives must be replaced. This is easily done by blending the purified and filtered oil with additive concentrate. This concentrate is usually available from the refiner supplying the original oil in such a form that one gallon of concentrate mixed with from 4 to 20 gal of processed crankcase oil will bring additives up to the levels which are present in new oil.

Oil drained from diesel locomotive crankcases and so processed and refortified under properly controlled conditions is equal in quality to new oil. No distinction is made between such reconditioned oil and new oil on the Frisco.

The basic equipment for the reconditioning of used crankcase oil by the process described above is commercially available. The user of the equipment, however, has ample opportunity to exercise his ingenuity in providing a suitable system of settling tanks for dirty oil, storage tanks for oil in the various stages of process, transfer pumps, refortification tanks with agitators, sight glasses to show condition of oil as it leaves the filter press, improved vacuum ejectors, and a versatile piping and valve system to tie all these components together for the most efficient operation.

We would like to warn those considering reconditioning of used crankcase oil against using the "minimum facilities necessary" approach. Much can be done to cut labor costs and minimize re-running of batches of improperly processed oil by careful reclaiming plant layout and by facilities for handling dirty and reclaimed oil with minimum effort, and miximum speed.

No one should buy one of the packaged oil reconditioning units, erect it in a corner of an old shop building, provide a few empty oil drums as storage tanks and expect low cost production of high-grade reconditioned oil. Careful planning and design of the oil-reclaiming facility are, in fact, fundamental to securing good return on the investment and constantly high quality reconditioned oil.

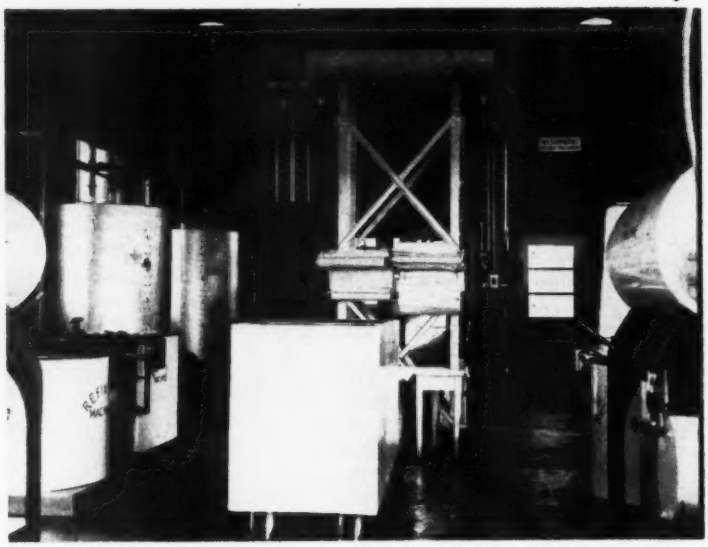
Quality Control Vital

Another essential to successful crankcase oil reconditioning is full laboratory control. Each batch of processed oil should be passed by a competent oil chemist. Also, the laboratory should have complete technical jurisdiction over the operation of the reclaiming plant. The laboratory should set up definite quality standards for the reconditioned oil and insist that this quality be maintained. This means constant supervision.

It is assumed that a railroad has determined that reconditioning of oil will have to be done with its own facilities and by its own forces. In all cases, before making this decision, the railroad should investigate the possibility of having diesel locomotive crankcase drainings processed by a commercial oil

OPERATOR examines processed oil for clarity and color before sending sample to laboratory.

OPERATING FLOOR of Frisco's oil reclaiming plant. Two 90-gal Refinoil machines at right and left. Two of four 600-gal tanks for reconditioned oil are shown at left rear. Service bins for clay and other processing materials are in center foreground. Overhead is the 200-gal holding tank.



reclaimer under contract. Commercial reclaimers, because of the size of their operations and (sometimes) superior equipment, can often recondition oil at a lower cost than could a railroad doing the same job. If the work can be advantageously turned over to a conveniently located commercial reclaimer who is able to turn out high-quality reconditioned oil—our advice is to adopt this course by all means.

The railroad's mechanical and testing departments will both benefit. In all such arrangements there should be a definite understanding between the railroad and the reclaimer as to the desired specifications of the reconditioned oil. The railroad should satisfy itself by frequent tests of oil samples that these conditions are being met.

Yes, reconditioning of oil drained from crankcases of diesel locomotives is entirely practicable. Like other enterprises, it will pay off in direct proportion to the thought, study and interest which is put into planning and operating the facility.

Here's How Frisco Does It

Readers may be interested in knowing just how the Frisco applies these principles. In 1951 we constructed, adjacent to our large diesel locomotive shop at Springfield, Mo., a specially designed brick building to house our crankcase oil reconditioning facilities. The basement of this building contains three V-bottom tanks—of 1,200-gal capacity each—for holding dirty oil so as to settle out water and sludge. The settled oil in these tanks—which can be kept warm with steam coils—is used as feed for two 90-gal Refinoil oil reconditioning units. The basement also holds two 1,200-gal tanks with propeller mixers for blending reclaimed oil with additive concentrate (refortification), and a 2,400-gal tank for holding that reconditioned oil which is to be used without refortification.

The main floor of the building houses the two Refinoil units with accessories, four 600-gal tanks for reconditioned oil, a 200-gal overhead holding tank for batches of processed oil awaiting laboratory approval of samples, and an office and washroom for the operator. All of the equipment is interconnected by a versatile system of piping, valves and pumps, which allows the transfer of oil to or from any tank or unit as desired.

"Extras" Added

A number of modifications and additions to the standard, "as-purchased" oil reclaiming equipment have been found to contribute greatly to convenience and economy of operation. These include: The provision of steam jet eductors instead of the standard water ejectors to provide higher and more rapid vacuum in the retorts; the use of compressed air instead of pumps to force the last few gallons of oil-clay slurry through the filter presses—thus preventing excessively rapid wear of the rotary oil transfer pumps; full flow sight glasses in the oil discharge lines of the filter presses to insure recirculation until the filtered oil runs clear; and the application of recording temperature and vacuum gages to the retorts.

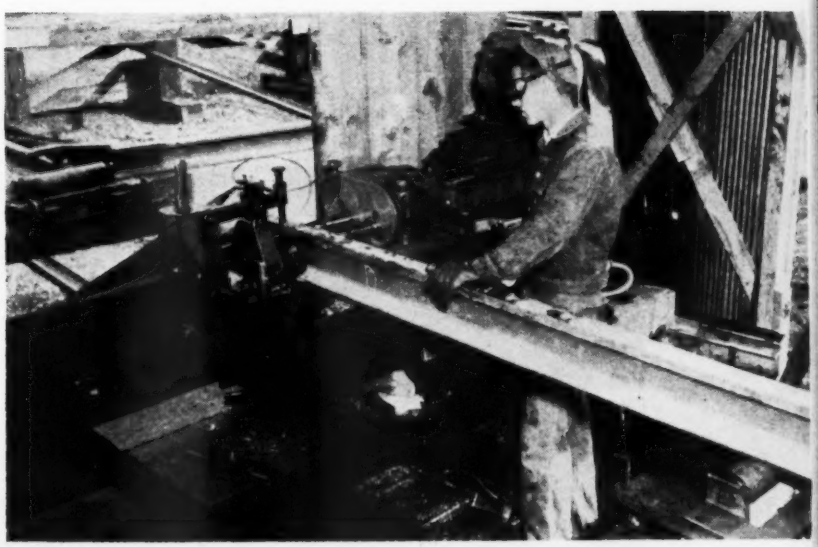
The building is provided with platforms on two sides. One side is served by a stub track. Dirty and reconditioned oil, in drums, is handled in and out of freight cars along this platform. Facilities for emptying, filling and cleaning drums are provided adjacent to the platforms. The major portion of oil processed by the plant, however, is handled by pump between the oil reconditioning plant and the storage tanks in the adjacent diesel shop.

The operation of the plant is under testing department supervision. The laboratory sets the standards to which the reconditioned oil must comply and a sample of each batch is sent to the laboratory for approval. No oil is released for use without such approval. Technical help is always available from the laboratory should the operator have trouble in producing the quality of oil desired.

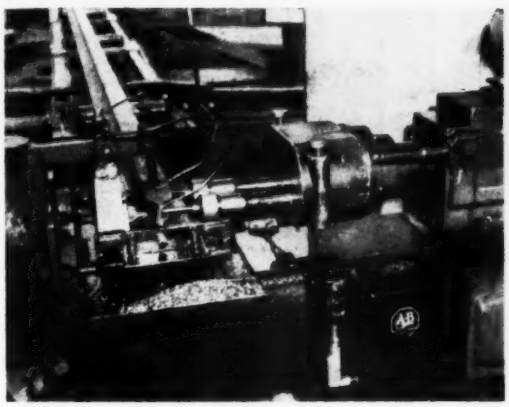
Reconditioned oil meeting these quality specifications is considered the equivalent of new oil, and is mixed with new oil for use in all classes of road units.

Ingenuity Does It . . .

How to Make a Dual Drill for Cropped Rails



OPERATOR positions the rail, then turns a handle; the drill does the rest.



ELECTRIC pump is the only new item on the home-made drill. Other material is second hand.

• This is a story of how ingenuity and resourcefulness solved a knotty problem on the Western Pacific. Here's how the problem came about, and how it was solved.

Before the WP installs relay rail on its branch lines, some of it is cropped to remove battered or badly worn ends, and drilled. Not having too much of this work, the road formerly contracted for it to be done by outsiders.

Upon completion of a rail-welding plant at Winnemucca, Nev., where the road's new 39-ft rails are joined to form 78-ft lengths, WP engineers gave thought to the possibility of doing the cropping there with the added feature of welding, when desired, the 36-ft cropped rails into 72-footers. The necessary roller lines and a second power saw seemed simple enough to install, but the means of drilling the bolt holes proved to be somewhat of a stickler.

Portable rail drills were ruled out because they would slow the entire operation and increase unit costs. On the other hand, a large multiple-spindle drill could not be justified because of the relatively small amount of cropping there was to do.

This is where Jackson Campbell and Erich Thomsen came in. Campbell is the road's welding supervisor, and Thomsen is the engineering inspector of rail and fastenings. They were given the problem of providing for the drilling of the necessary bolt holes in the cropped rail.

They packed their bags and headed for Los Angeles where a large second-hand machinery market exists. Here they visited every available dealer in search of a second-hand machine, but none within the price range was available.

Why Not Make Our Own?

While making the rounds they had noticed certain machine components which might be put together to answer their end purpose. They revisited several dealers and procured an "Ex-Cell-O" boring unit, a "US" multiple-spindle drill attachment, a welded-steel box girder which had been "thrown in" with the boring unit, and two old portable drill units. These were taken by truck to the road's motor-car shop at Oakland, Calif., where the shop personnel went to work on the assembly problem.

The boring unit was coupled, by means of an adapter plate, to the drill attachment. A pair of flat drill chucks was taken from the portable drills and fixed to the drill attachment. A second-hand electric motor was resurrected from the road's cast-off motors and used to power this combination of parts through a belt drive. All were then mounted on a frame made from the box girder.

An operating table, for guiding the rail into place, was constructed primarily from parts salvaged when trimming the box girder, and a clamp for holding the rail in position was devised by the shop personnel. A coolant system for the bits was fashioned from an old motor-car gasoline tank, which serves as a reservoir, and a small electric pump, the latter being the only new item of equipment installed on the machine.

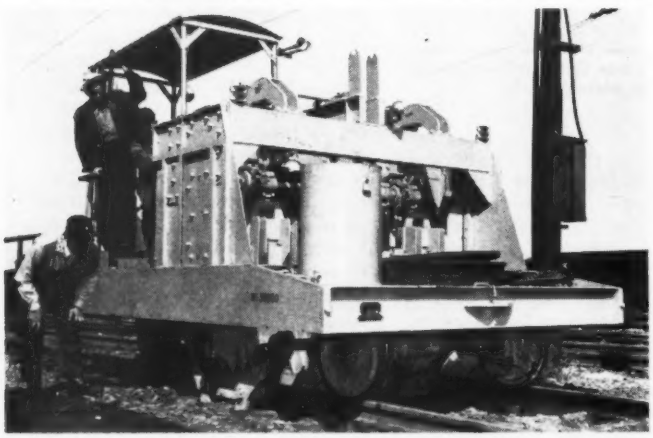
Has Automatic Feature

When operating the machine, the operator merely turns a small handle to start the action and the machine does the rest. The spindles approach the rail rapidly, then automatically slow to the proper drilling speed. When the holes are drilled, the spindles retract rapidly and the rail is ready to be rolled out. The drilling speed is adjustable.

The drill table can be adjusted to fit any rail section and the bits also can be adjusted for any desired centers. Furthermore, rails do not have to be turned on their sides to be drilled, thus resulting in considerable savings in time and manpower.

PRESSURE CREOSOTED wooden jackets, secured by wrought iron straps and bolts, are effectively resisting the corrosive effects of salt water on these concrete piles supporting the Rockaway Beach bridge at New York. Unprotected concrete disintegrated in 15 years; jacketed piling has resisted corrosion for periods up to 33 years. A number of concrete pile structures in the New York area now employ this protection.

News Briefs in Pictures . . .



MODIFIED to meet the third rail clearance requirements of the New York City Transit Authority, this Pullman-Standard Power Ballaster is now in service on the system. Because of traffic density, subway work is done in early morning hours; machine is used on surface during the day.

MOVING SIDEWALK gives Chicago Transit Authority patrons a "lift" at a southside elevated train platform. Known as the Speedwalk Passenger Conveyor, it is 88 ft long and rises to an elevation of 22 ft. If the test installation is successful, others may follow.

NEW LIFT BRIDGE on the New York Central was opened to rail traffic recently across the Cuyahoga river at Cleveland. The new span, built to permit widening of the river, replaces a 92-year old swing span.

WHAT'S THE ANSWER? . . .

. . . a forum on track, bridge, building and water service problems

Lining Turnout Rails

What methods can be used to insure accuracy in lining turnout rails where the turnout is made from a curved main track? What special precautions should be observed? Explain.

Use Standard Plans

By James R. Corden, Sr.
General Track Foreman, Southern Pacific, Wells, Nev.

Various articles have been written and opinions expressed in connection with original lining and maintenance lining of turnout rails.

First, we must stop to think of our engineering staff; these men have gone to a lot of hard work to figure out in advance, and give us in the field, tailored switches with closure rails, angle bars, milled plates, bolts, etc., to simplify and expedite the installation of switches. These tailored fittings will fit only where they are intended. Therefore, C. S. drawings should always be used to determine proper offset measurements and the placing of tailored fittings.

When installing a turnout, closure rails, plates, etc., should be set up in advance of installation, joints properly greased, bolts in connecting rods and tie rods, and bolts removed from rail braces and given a light coat of 904 graphite grease. This will speed up the installation of the switch and all connections will seat more rapidly.

Before spiking closure rails, the main line rail should be spiked at every third tie to secure proper gage. Then, spike offsets given on C. S. drawings. Offset spikes should be driven so they are snug against the base of rail to secure it in place. After this is completed, milled plates should be placed to fit the spread in main line and closure rail. Then ties should be spaced to meet the spacing of the plates. Plates should not be spiked to ties and the rail forced by jack or bars to fit into plates as this will leave very bad line kinks and will be very hard to correct once the rail is seated.

In my opinion, I believe, that, if turnouts are installed with proper care and C. S. drawings used for getting proper offset measurements, very little, if any, trouble will develop later in the closure rails.

Follow Standards—Use String

By T. J. Barcio
Roadmaster, Chicago & North Western, Sparta, Wis.

Of first importance is to know the kind of turnout being used and the kind of curvature it will serve, that is, the degree of curve on the main track and also on the turnout. The rails should then be lined in proportion to the curve in the turnout, by the same methods as used in a turnout coming from straight main track—that is, by measuring stations every 10 ft from the heel of the switch towards the point of frog.

Most railroads have a standard plan to follow and such plans should be followed very closely. Special precautions should be taken if the turnout is going to have a larger degree of curve than the main track and is on the inside of the curved main track. Then, the turnout should be lined to correspond with the degree of the curvature. Measurement would be different than if the turnout would have the same curvature degree as the main track because, as each station is measured, the distance would be a little different than in the equal curvature. Of course, each different type of turnout would have a different measurement standard. A person doing such work should always check the turnout by eye to insure that it does not leave a bad kink in the closure curve.

Another good way to check is by using standard string-lining practice at every station. After the degree of curvature has been found this should be simple.

A question might arise as to how this can be done when the string is too long. In such a case I suggest that one-half the amount of the string be used and one-half of the

---

Answers to the following questions are solicited from readers. They should be addressed to the What's the Answer editor, Railway Track and Structures, 79 W. Monroe St., Chicago 3, and reach him at least five (5) weeks in advance of the publication date (the first of the month) of the issue in which they are to appear. An honorarium will be given for each published answer on the basis of its substance and length. Answers will appear with or without the name and title of the author, as may be requested. The editor will also welcome any questions which you may wish to have discussed.

To Be Answered In the July Issue

1. When using hand jacks in connection with production tampers how many jacks are needed on each side to give the best results? Explain.

2. What factors determine whether the lumber used in railway buildings should be given preservative treatment? The type of treatment to be used? Explain.

3. What is the most efficient method for controlling blow sand and soil? Of the methods currently in use, which has the lowest first cost, which the longest service life? To what extent does such work also contribute to the effective control of water erosion? Explain.

4. What factors determine whether the cross section of precast concrete piles should be square, octagonal, round or some other shape? Explain.

5. How often should the interiors of large diesel fuel-oil storage tanks be cleaned? Explain. What cleaning methods are most effective?

degree measurement or, if necessary, one-fourth of the string and one-fourth of the curvature could be used. This, of course, takes a little figuring but once a person has acquired the method it is not difficult. My past experience in this work has found the above methods work out satisfactorily.

String Most Practical

By J. L. DELL
Track Supervisor, Baltimore & Ohio, Garrett, Ind.

The most practical method for lining turnout rails when the turnout is placed in a main track curve is string lining. By the use of a short string great accuracy will be insured. This method is simple enough to be used by any competent track foreman.

After the main track rails and frog have been fastened in place, install the turnout rail and switch point and bolt them tightly in place. It is important that the joints be tight enough to prevent hinging. Make sure that the rails are properly seated in the tie plates to allow free lateral movement of the rails. Accurate line cannot be made if the tie plates are not kept in proper relation with the rail. Provide the correct opening at heel of switch and fasten permanently. Line the turnout rails very carefully by sighting. If good line is provided by sighting, later corrections will be slight and a good deal of time can be saved.

Starting at the heel of the switch point, mark off the turnout rail in stations of even length. Stations should be from 8 ft to 15 ft apart to allow the use of a string from 16 ft to 30 ft in length. The stations need not be divided down to fractions of inches. If 1 or 2 ft are left at the frog end of the turnout rail, this may be ignored as the end of the rail is rigidly fastened to the frog and cannot be moved. As an instance, our No. 8 turnouts require 46 ft of rail between switch point and frog. Making the stations 9 ft apart would leave 1 ft at the frog.

After the stations have been marked, stretch a string between alternate stations and measure at the center of the string to the gage of the rail. Record this measurement in one-eighth inches. Advance one station at a time and take measurements at the center of the string each time until reaching the opposite end of the rail. Add all the measured ordinates together and divide by the number of measurements taken. This will give the desired ordinate for each station and the one that will have to be used to provide accurate curvature on the turnout rail.

After the desired ordinate has been determined, go over the rail with the string as before, moving the rail in or out to achieve the desired ordinate at the center of the string in each instance. Be sure that the tie plates do not hold the rail to make short kinks. After the rail has been moved at each point, hold it firmly with bars so that it cannot move when an adjustment is made at an adjacent station.

When the entire turnout rail has been adjusted in this manner, one-half of the error in the curvature will have been removed. Go over the rail again as many times as necessary to make the measured ordinates at each station equal. If a fairly good line was made by the original sighting, the curve should be accurate after going over it three times, making adjustments at each station. The rail should then be sighted carefully to be sure that no short kinks are left. If none is apparent the turnout rail can be fastened down permanently.

Before commencing work on the turnout, someone should determine whether or not the curvature of the turnout rails will be too great for operation. In many cases it will be necessary to lengthen the lead of the turnout to reduce the curvature and insure that there will not be too sharp a compound at the frog or at the heel of the switch. Where the degree of curvature is high, a sharply compounded spot will be fully as unworkable as having a spot in which the curvature is "bunched."

Reuse of Removed Ties

How many years of service life should remain in those ties which are removed from track in a "cycled" tie-renewal program and reused in secondary tracks? What effect does the length of the tie-renewal cycle have upon the percentage of reusable ties? Explain.

Economy Determines

By E. L. ANDERSON
Assistant Vice-President Operations, St. Louis-San Francisco, St. Louis, Mo.

The service life remaining in ties removed from track in a cycle tie renewal program, should be predicated on an economy basis.

First, determination should be made as to the length of time to be set up between the cycles for tie renewals. Where the period between cycle maintenance is relatively short, only ties that have no further service life should be removed. If the period between the renewal program is to be several years, then study should be given carefully to the number of years of effective life left in any tie that is removed and all ties that will not give effective life approximately for the entire period between the cycle installations should be currently removed.

When such ties are removed, a check should be made to evaluate the remaining life left in the ties and a disposition made, based on the cost for handling these ties, both to points of insertion and cost of inserting them in secondary track.

Should this total cost divided by the expected years of life result in an amount in excess of the yearly cost of a new tie installed in such secondary track, then the tie removed in cycle maintenance cannot economically be inserted in the secondary track and should not be so used.

Under the first consideration, where the period is relatively short between tie insertions, it is doubtful if any of the removed ties should be reused. Where the period is as much as 6 or 7 years, perhaps 50 per cent of the ties removed should be reusable after a well-established cycle maintenance program has been in effect.

Definitely, no hard and fast rule can be set up as to percentage of ties removed that should be reusable. The conditions under which the removed ties are to be taken out, the handling that has to be given and the possibility of reinsertion, all enter into the number of crossties that can be taken out economically and reused. Good judgment and knowledge of the

life left in the timber, as well as the cost items for handling and reusing, are absolutely necessary to determine the programs or procedures that should be followed in use of ties removed.

The above is predicated on the theory that sufficient timber for making ties is available.

Installing High-Strength Bolts

What practical means can be used when installing high-strength bolts with air-operated impact wrenches to insure proper bolt tension? How can the proper bolt tension be determined for a particular size of bolt? What happens when pressure is too high? Too low? Explain.

Calibrate with Torque Wrench

By V. W. Hutchings
Bridge & Building Supervisor,
Southern Pacific,
Bakersfield, Cal.

We use mostly ⅞-in bolts in our bridge work. Our instructions are to tighten the nuts as tight as we can by hand and then make not more than one full turn with wrench. By using the same size wrench at all times, this gives us a consistent tension. The size of the wrench to be used can be determined by comparing it with a torque wrench.

Our compressors are set to kick off at 100 lb and work on a 5 to 7-lb variation. With that amount of variation we don't experience trouble with pressure changes. We have found that having more air than we need—for the majority of the time—is the most efficient way to operate. When the pressure goes down, an impact wrench is the same as a jack hammer—it just won't do the work.

An air flow gage or meter is very desirable, as it will indicate the condition of the air tool being used. If the tool is not getting sufficient air because of a dirty screen or port, or if the tool is using an excess of air due to wear, or leaks, the gage will show it. Our maintenance of automotive equipment supervisor informs me that they have an adjustment on their impact wrenches. He has a chart in his shop that shows the tension for the different bolts.

Before using the impact wrench, it is set by a torque wrench for the proper tension.

Unloading Ballast Safely

What safety precautions should be taken by men engaged in unloading ballast? What special equipment, if any, should be worn and/or used by these men to prevent injury? Explain.

Keep Alert

By Maintenance Gang Foreman

My experience in ballast unloading is confined to dumping gravel with commercial type cars of the coal or ore hopper type. From what I have seen, special ballast cars seem to eliminate many of the dangers involved with commercial hopper cars.

If the men engaged in ballast unloading dress as good trackmen should, i.e. pants without cuffs or tied at the ankles to prevent tripping, safety shoes to prevent foot injuries, gloves to prevent slivers and cuts to the hands, etc., I know of no special clothing that should be worn.

I believe certain fundamental rules should be followed around the work train:

1. One brakeman on the engineer's side of the train should give all signals for the foreman in charge;

2. The foreman in charge of the unloading gang should be on the engineer's side and give the word to start and stop the train. He should not order the train moved until he sounds a warning to all men. Another foreman or assistant foreman should be on the opposite side of train, paying special attention to orders given by the foreman in charge. He should see to it that the men on his side obey orders promptly and are out of danger before the train moves;

3. Unnecessary hollering or talking should not be allowed;

4. No one should get under or between cars for any reason, unless the man giving signals to the engineer is at the point where this becomes necessary. Too many men who see something that must be done under or between cars will immediately try to do it just because the train happens to be stopped;

5. Do not remove the plow ties unless the train is stopped, and then only if the foreman gives the order;

6. If the ties used to plow ballast begin to roll or slow while train is moving—keep hands off!

If injuries around ballast trains are to be eliminated, the men must be made conscious of the fact that their actions can cause injury to fellow workers on the opposite side of the train. Fingers pinched by the plow ties being handled by men on the opposite side are very common. Hands should be kept clear when closing coal-hopper-type doors. Men opening car doors should be the best and most alert men on the crew—especially with certain types of cars.

When it is necessary to chain plow ties, the chain should be fastened on a part of the truck—not the car body. This will prevent sudden strains in the chain should a truck derail and turn.

Keep Cool, Collected

By B. F. McDermott
Roadmaster, Chicago & North Western,
Brookings, S. D.

Safety, of course, is of the first importance when performing any kind of work on a railroad, and especially so when men are working around and with a work train, which is always used when unloading any of the various kinds of ballast or rip-rap.

The supervisor in charge of the work train, whether he be a track foreman or the roadmaster, must exercise great care in the placing and handling of his men in this operation. As a general practice, the work train is in charge of the roadmaster or his assistant. He should see to it that he has a competent and experienced foreman to

handle the actual unloading of the ballast.

Work trains cost money and while the train is actually in use unloading and spreading the ballast, every minute must be utilized and there should be as little lost motion and delay as possible. This calls for cool, level-headed, safe supervision on the part of the man in charge. The foreman in charge of the actual unloading should select men who are experienced, safe workers and agile of foot.

All equipment used for the unloading of the ballast should be either with the work train or ready for use at the point of unloading. This usually includes one or two ties for placing ahead of the wheels of the ballast car which is being unloaded, two or more chains for securing ties to journal boxes, track shovels, and certain types of wrenches or cranks or bars, depending, of course, on what type of ballast hopper you are unloading.

There are usually two common types: the selective hopper ballast cars and the conventional hopper bottom cars of the type regularly used in revenue service, designed with floors sloping from the ends and sides to one or more hoppers which will discharge the load by gravity through the hopper doors.

Now to begin with, the work train foreman or roadmaster in charge of the train should hold a consultation with the engineer and the conductor of the train before the actual unloading starts, so that the train crew will coordinate with the unloading crew and the entire unit will work as a team without any misunderstanding or confusion. The giving of signals to the engineer is of the utmost importance. Only one man gives the signals to the engineer and that will be the conductor or one of his designated brakemen. The work train foreman will advise the conductor or brakeman what moves he wants made while the ballast is being unloaded from the cars.

The work-train foreman will see to it that his men are in the clear when the train begins to move. As a general practice two competent men are stationed on each side of the ballast car to handle the ties and chains, and to regulate the flow of ballast. Sometimes it is necessary to put three or four men inside the hoppers to shovel down the ballast. When this has to be done extreme care should be exercised to see to it that the train does not move while the men are climbing into or out of the car. The men should not be allowed to get in between the cars or stand up on top of them.

When unloading cinders, or any sharp or fine ballast or rip-rap, safety goggles should be worn by all members of the unloading crew. When the men are ready to climb out of the cars care should be taken to see that they do not drop or throw their shovels or bars down and strike men working or walking near the cars.

Good judgment should be used to see to it that not too many cars are retained in the train while ballast is being unloaded. This, of course, depends on the grade and the power used. Sometimes it is best to cut off ten or twelve loads at a time, which makes it possible for the engineer to handle his train more easily and eliminate the possibility of stalling and unloading too much ballast in one spot. Uneven handling could also cause a ballast car to derail due to too much ballast on the rail, as well as delays caused while men shovel ballast out so that the train can be moved to say nothing of an irregular gravel spread.

In conclusion, I wish to state that safety in work-train operation depends on good supervision, good organization and cool and collected handling of the men on the ground. Sometimes men become excited when working around a work train, especially when something goes wrong and if they are not properly instructed. I have seen supervisors themselves become excited and even abusive to their men all due to poor organization, not enough instruction and poor coordination between the train crew and the man in charge. Good supervision and planning is absolutely necessary to insure safe and economic use of work trains.

Use Common Sense

By C. E. Neal

Division Engineer, Northwestern Pacific, San Rafael, Cal.

The unloading of ballast from ballast cars being handled on a moving train is a common job which is considered non-hazardous by experienced trackmen, particularly so when the men performing this duty understand the part they are to play in getting the desired job done. Obviously a well trained group of men who have had considerable experience in this particular phase of track work will not require as much safety instruction as an inexperienced crew will.

Yet, a few well-chosen words on the general subject, with clear instructions as to the duties each man will perform before the job of unloading ballast is undertaken, will insure getting the job done properly without personal injuries. Every man should be cautioned to be alert around the moving train, to be watchful of his footing, and to follow instructions closely on the opening and closing of the ballast car doors.

It would also be well to caution the men about getting off and on the moving train and to emphasize that this practice must be avoided. Ordinary work clothes which are not baggy, and which do not have a lot of loose ends, should be worn for they are not liable to be caught on the moving cars or create a stumbling hazard which could result in a serious accident. Safety shoes are strongly recommended and the use of good, well fitting gloves will save a lot of skinned knuckles.

If the ballast to be unloaded is dry and dusty, it would be well to wet it down before unloading it to prevent the men from having to work in the dust, which creates a hazard by obscuring the vision. It may be that water is not readily available, in which case it would be well to see that the men who have to work under these conditions are furnished with respirators and safety goggles.

It would be well to understand that all of the safety equipment furnished would only be an aid to the man doing his job; to remain free of injury he must be thoroughly schooled in good basic safety procedures, and must follow these procedures or all of the safety equipment that could be given will be useless.

Unloading of ballast is performed many times daily, by many people at different locations and seldom does an accident occur. In my experience I have only known two men to be injured: one lost the end of his thumb on the right hand when he slipped from the end of a car and caught the thumb between the end of the draw bar and car; the second man received a lacerated finger when he caught his hand between the unloading lever and the side of a car. Both of these accidents were avoidable and should never have happened.

Common sense and know-how, along with safety education and

practices, can make this type of work non-hazardous.

The remarks of the writer are very general because there are so many types of ballast cars being used, so many types of ballast being unloaded, so many different methods of plowing the ballast down, etc., that it would be impossible to give a comprehensive answer to the question asked unless all these things were known.

Wear Safety Belts in Cars

By F. P. Purcell
Roadmaster, Nickel Plate, Frankfort, Ind.

The men assigned to work in cars, pushing ballast down into hoppers, should exercise care in climbing side ladders to tops of cars, particularly with tools in their hands, to avoid both slipping and/or dropping their tools on the men on the ground.

The men assigned to working in cars—particularly the men required to work downward into pockets—should wear safety belts. These belts should be made of leather, approximately 2-in wide and about 5-ft, 10-in. in length with a buckle for adjustment. They should have a ½-in manila rope about 10 or 12 ft in length that fastens to the belt on a roller snap, with a hook on opposite end. This hook is shaped to fit over the ledge at the top of the car. This belt will permit the man to work as deep into the car as necessary, and will prevent his falling through the hoppers in case his footing is lost.

Furthermore, men working near the top of a car may work ballast down from the top of the car and hold the rope with one hand giving them security in case of slipping. The ropes are a great help in getting in and out of cars safely. There have been quite a few accidents caused by men falling through hoppers. The safety belt will definitely prevent this occurrence.

There should be a foreman or assistant foreman assigned to the top of the cars to make sure that the men inside have their safety belts properly set and also to transmit signals when moves or stops are to be made. He should also see that the men do not climb from car to car over ends and that no men move from car to car while the train is moving.

The men on the ground, in charge of opening the hopper doors, should exercise care in placing skid ties, chaining of pockets when necessary and placing of unloading pans when used. These operations can cause serious accidents when fingers and hands get caught in chains and under skid ties and unloading pans as they are being placed or removed. Generally, there are men more experienced in this work available; they should be kept on these particular jobs.

The man assigned to opening the pockets should have experience in doing this work and must work closely with the foreman or person in charge of the unloading. There should be a foreman in charge of the ground men. Generally, he is the one who directs the trainmen in making the moves. He should always inform the foreman or assistant foreman on top of cars as to starting and stopping.

When unloading ballast from hopper cars not designed as ballast cars, Coffing hoists, with necessary chains, are of great value in controlling the opening of hopper pockets and controlling the flow of ballast as, often, when doors open too wide, attempts are made to speed up trains suddenly to spread ballast; this can result in accidents.

Assign Each Man a Job

By Ira W. Toy
Roadmaster, Soo Line, Drake, N. D.

One should pick his most alert men for this work: ones that are safety-minded and on the lookout for others as well as themselves. There are many dangerous steps and movements that can be made around a work train by one that is not acquainted with this work. I always find it best to have an extra man broken in for this work over and above the regular crews. In this way, you will have a man to call on in case you need one. Each man should be instructed as to his particular location and job, and, above all, just one man should be responsible for relaying signals to the train crew.

The men should not be allowed to work without safety shoes. They should wear safety goggles that have plenty of air ventilation so they will not fog over. One should have the right amount of help, so that no man will have to hurry or overexert himself to keep things going.

Water in Fuel Tanks

What methods may be used to reduce the amount of water collecting in fuel-oil storage tanks due to condensation? How often and by what means should such water be measured and removed? Explain.

Install Condensate Drains

By L. P. Drew
Assistant Chief Engineer, Union Pacific, Omaha, Neb.

The method to be used in removing condensation from oil storage tanks depends on the type of oil stored, also the type of tank.

For storage of oils having specific gravities less than that which will float on water, the condensation can be removed from the bottom of the tank by siphon action. In tanks storing oils heavier than water, the condensation can usually be brought to the bottom by heating the oil until the specific gravity is reduced to less than one.

For small, horizontal, cylindrical tanks, the most satisfactory method of removing condensation is to provide a water leg at the bottom of one end; this end of the tank to be set slightly lower than the other so that all condensation will flow to the water leg. A drain valve in the bottom of the water leg can be opened periodically and the condensation drained to the sewer or other point of disposition. The outlet from this drain should be open so that inspection will indicate when water has been drained and oil starts to show.

For large vertical tanks several drains should be placed around the perimeter 6 in to 8 in above the bottom with gate valves that can be opened with a discharge pipe leading to a point of disposal. These outlet pipes should also be open for visual inspection to determine when water has been drained and oil appears. Inside the tank these

pipes should be bent down to lay on the floor or bottom sheet extending toward the center 10 or 15 ft with perforated pipe, so that condensation and sediment can be drawn off by hydraulic pressure from under the oil when the tank is full.

These drain valves should only be opened after tank has stood without agitation, either due to filling or withdrawal for several hours, in order to allow any water which might be present in the tank to settle to the bottom.

If it is desired that the amount of this condensation be measured, suitable metering devices could be provided on each of the outlet pipes.

Check Regularly

By J. W. Ussher

Engineer of Lubrication and Water Treatment, Canadian Pacific, Montreal, Que.

It is not understood whether the reference is made to wayside storage tanks or to the fuel tanks on the diesel units. We have never encountered difficulty with water in our wayside fueling tanks. The fuel is removed from the tank from a point approximately 18 in above the bottom of the tank. The tanks are equipped with a condensate drain, which is checked every three months. However, to the best of my knowledge, at these check intervals, water has not been encountered. On occasion, the tanks are checked for water by lowering a plug covered with a water-indicating paste; this test has always indicated negative results, e.g., no water present.

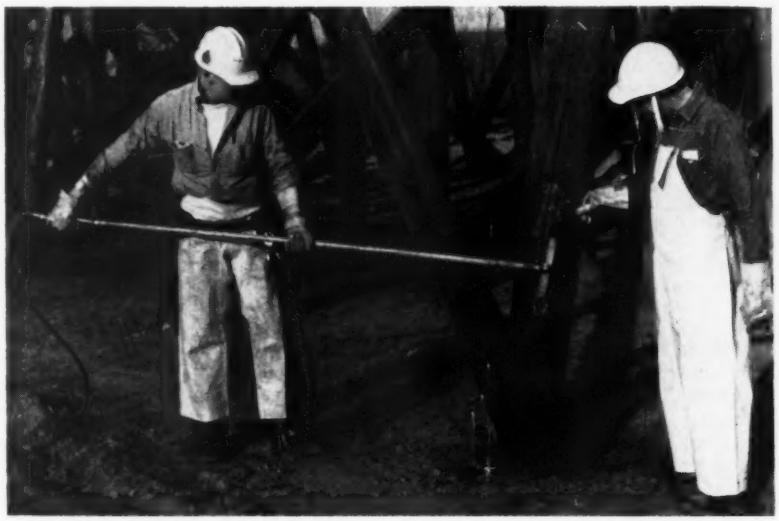
In the case of tanks on diesel units, we have encountered water, and in this connection have found that the most important feature is to assure yourself that the tanks are properly drained in the shop during weather periods where freezing might occur; by this, I mean checks above and beyond the maintenance instructions which are normally followed.

Another step taken to prevent condensation is the filling of the fuel oil tanks on the shop track prior to the time the unit enters the shop.

If, during particularly cold weather, period operation indicates difficulty due to water in the fuel system, isopropyl alcohol is supplied to the storage tank on the unit.

PRODUCTS OF MANUFACTURERS . . .

. . . new, improved equipment, materials, devices



PENTA SOLUTION FOR BRIDGE SPRAYING

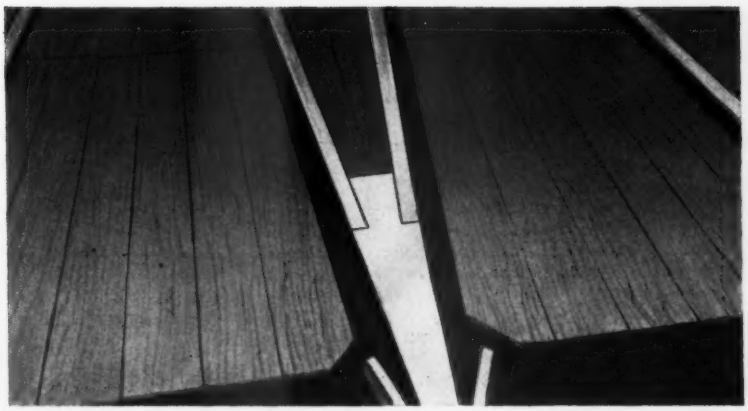
A PATENTED pentachlorophenol formulation, designated "24-12" is now available for spray application to timber-bridges to prolong their service life. This formulation is especially designed to minimize the danger of fire. The manufacturer reports, that, after 24 hr. the treated bridge is no more vulnerable to fire than it was before use of the preservative treatment. *Osmose Wood Preserving Company of America, Inc., Dept. RTS, 980 Ellicott St., Buffalo 9, N.Y.*

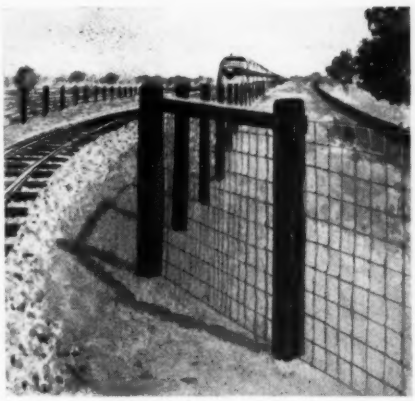
HIGH-SPEED FRONT-END LOADER

ANOTHER model of the Payloader line of earthmoving equipment, which combines the characteristics of a tractor, loader and shovel, is now available. Designated the International Model 12 Payloader, the new machine is a crawler-type, rear-engine, 1¾-cu yd front-end loader having three forward speeds, ranging from 0 to 10 mph, and three reverse speeds, from 0 to 13 mph, which, according to the manufacturer, make this machine the fastest crawler-tractor loader in the field.

It is powered by a 77-hp International UD-350 engine through a power-shaft transmission and torque-converter drive. By mounting the engine at the rear, the manufacturer states that the Payloader has better balance and stability through better weight distribution. This feature, it is said, extends the life of the track

From crossings . . .





. . . to right-of-way fence posts

. . . to warehouse platform decking

. . . and cattle loading chutes

Clean Penta-treated wood can cut your maintenance costs

Are you taking advantage of *all* the areas where Penta-treated wood can stretch maintenance dollars?

Penta-treated wood's *proved* long-term protection against decay and termite attack make it ideally suited for use in cattle loading bins, equipment sheds, trackside warehouses, right-of-way fencing and walkways, as well as for bridge timbers and crossties.

The economy of 30-year Penta-treated wood from initial installation through maintenance-free service life is reflected in greatly reduced labor time and costs.

The relative cleanliness of Penta-protected wood—the fact that the preservative doesn't ooze out to burn hands or stain clothing or shipments—is a big plus factor with your work crews as well as your customers.

For a factual report on the economies of Penta and Penta protection, write for your copy of "WHAT THEY WILL ASK ABOUT PENTA."

Organic Chemicals Division
MONSANTO CHEMICAL COMPANY
Dept. PI-18A, St. Louis 1, Missouri

MONSANTO ®

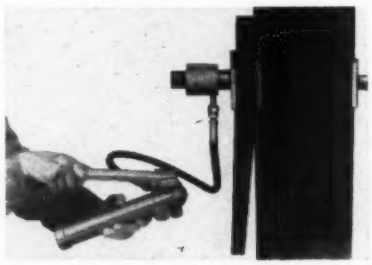
chains, idlers, rollers, and other track parts, as well as permits negotiation of steeper grades and muddy terrain to a much greater extent than the conventional tractor.

Other advantages cited by the manufacturer include: Power steering controls; pry-out action; break-out bucket cycle; 40-deg bucket tip-back at ground level; a super-service chassis tilt; adjustable operator seat; closed hydraulic system with pressure control; hydraulic-system shock absorber; 1¾ cu yd capacity with a 1½-cu. yd. struck capacity; and 9-ft discharge height.

Model 12 is mounted on standard International extended TD-9 track frames equipped with 15-in wide low-profile grouser shoes. It is designed so that servicing the machine is said to be easy and simple. By removing two pins at the rear of the tractor and applying down pressure to the bucket, the chassis tips up to expose the deck of the main frame. With the chassis in the up position, it is possible to remove or service the steering clutches from that opening. The bottom of the engine also is serviceable with the chassis in that position. *International Harvester Company, Dept. RTS, 180 N. Michigan Ave., Chicago 1.*

HYDRAULIC JACK FOR HEAVY LIFTING

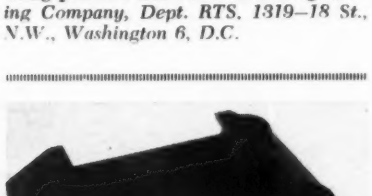
MODEL 100B-12 is the designation for a 100-ton two-speed hydraulic jack which was developed for handling the extra-heavy loads. Although it has a lifting height of 6⅛ in, the unit itself is low in height to make it a useful device for bridge erection and maintenance, as well as for lifting heavy equipment and for moving machinery. This jack is equipped with a tandem pump to permit rapid engagement of the load. By actuating both its high-speed and high-lift plungers, the operator quickly brings the ram in contact with the load. Using the high-lift plunger alone, the load is lifted easily. Dual release valves in the base can be operated from either side. The jack base is drilled and tapped for a pressure gage, an optional feature at extra cost. *Western Railroad Supply Company, Dept. RTS, 2400 S. Ashland Ave., Chicago 8.*



HAND PRESS SEATS TECO CONNECTORS

A NEW TOOL, designed to speed up the construction of wood bridges, trestles, docks and other railroad marine structures, has been developed for embedding Teco toothed-ring and spike-grid timber connectors in the wood when making a joint. Designated the Greenlee-Teco hydraulic press, the new tool is a lightweight portable unit consisting of a hand pump connected by a high-pressure hose to a spring-loaded ram. The manufacturer states that a few short strokes of the hand pump quickly develop 11 tons of ram pressure, which forces the wood members together, solidly embeds the connector, and produces a tight, firm timber joint.

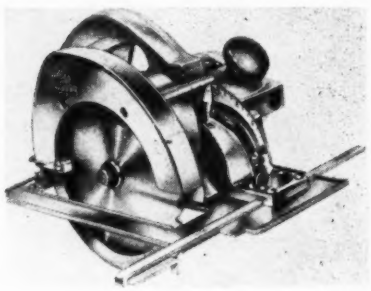
An auxiliary tool to the hydraulic press is the Greenlee-Teco bolt-hole treater which forces preservative into the wood under pressure where holes must be made in wood members after being pressure treated. *Timber Engineering Company, Dept. RTS, 1319–18 St., N.W., Washington 6, D.C.*



RUBBER TIE PLATES FOR TUNNEL USE

DOUBLE-SHOULDER rubber tie plates have now been made available for installation in tunnels and at other locations where corrosion of tie plates and rails presents a problem. The rubber tie plates are moulded in one piece to give a 1 in 40 cant, to fit the width of the rail base and to lap slighthly over the upper edges of the base. Four rail-spike holes are provided and the areas at these locations are built up not only to give extra strength at these points but also to provide a flat engaging surface for the undersides of the spikes.

The manufacturer states that an installation of the double-shoulder tie plates has already been made in the New York subway on high-speed track where the trains are spaced about 90 sec apart. It is reported that the rail at this location was normally changed out after eight months' service. A test installation of 600 double-shoulder rubber tie plates was made. On the basis of their performance during five months' service further installations will be made beginning in March, it is reported. *Railroad Rubber Products, Inc., Dept. RTS, P.O. Box 47, Ashtabula, Ohio.*



NEW 6½-IN ELECTRIC PORTABLE POWER SAW

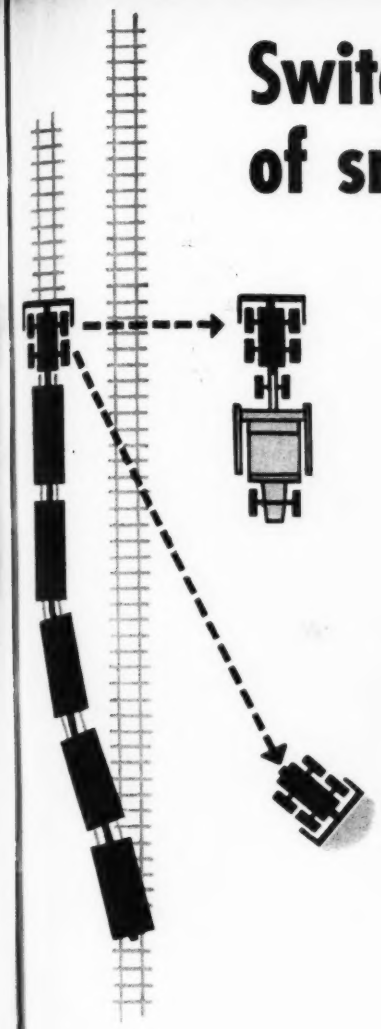
DESIGNATED as the 450 "SpeedSaw," a new general-purpose electric 6½-in power saw has recently been introduced. Designed to meet requirements for the builder and craftsman, the saw is equipped with a 1¼-hp universal electric motor and, the manufacturer claims, can cut through 2x4 boards at angles up to 35 deg with ease. The saw operates at a speed of 5400 rpm on either ac or dc current. An aluminum alloy die cast housing provides strength and helps reduce the tool's total weight to 12 lb. A cutting-guide notch aids in making accurate cuts. Wing-nut adjustments may be set for various depths of cut and for positive and accurate angle cuts. The No. 450 SpeedSaw has an automatic telescoping blade guard which rides on anti-friction bearings. A special handle permits the safe withdrawal of the guard for plunge cuts. The saw comes equipped with combination blade and 10 ft of cable with grounding connector. The price of the new saw is $49.95; rip fence is included at no extra cost. *Thor Power Tool Company, Dept. RTS, Aurora, Ill.*

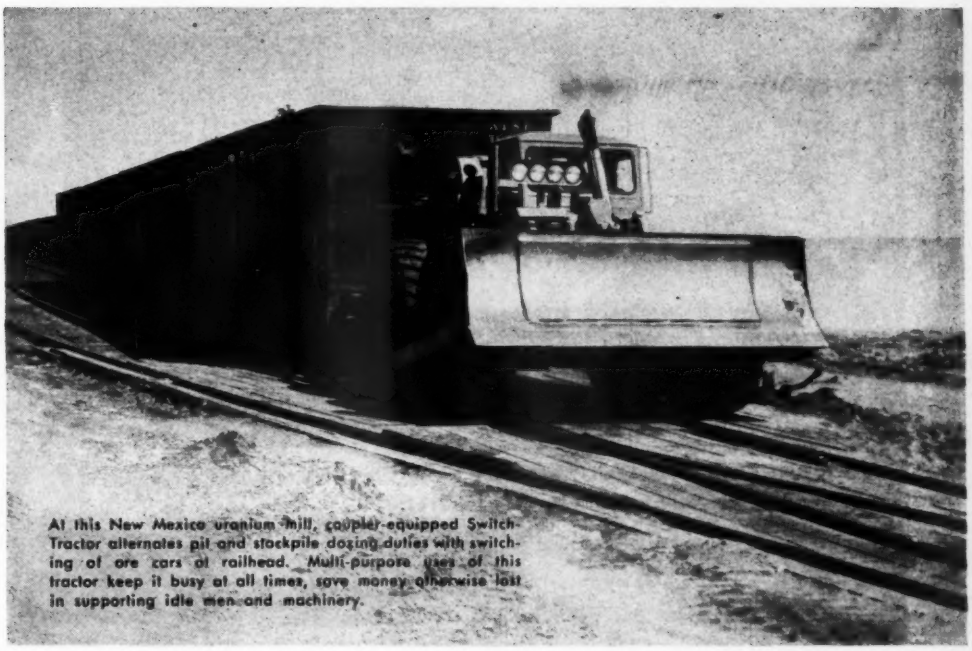
"FULL-FUSION" WELD FOR CONTINUOUS RAIL

AN IMPROVED "Full-Fusion" Thermit rail-welding process has been developed which the manufacturer states not only reduces the preheating time and simplifies operations but also results in increased production of approximately 20 to 25 per cent over the former process. The equipment is portable so that the entire process of welding rails in the track, as well as the repair of frogs, mates, and crossings, can be accomplished by two men.

SwitchTractor solves problem of small, scattered switching jobs

Dozes, tows, operates equipment, too





At this New Mexico uranium mill, coupler-equipped SwitchTractor alternates pit and stockpile dozing duties with switching of ore cars at railhead. Multi-purpose uses of this tractor keep it busy at all times, save money otherwise lost in supporting idle men and machinery.

You get three tools in one when you buy a 208 hp SwitchTractor. This powerful, coupler-equipped, rubber-tired tractor is an off-track switcher, a heavy-duty dozer, and an all-purpose towing vehicle. The basic Tournatractor, to which a standard RR coupler has been added to make the SwitchTractor, has proved its worth on many major rail-lines during the past 10 years.

This versatile tractor handles scattered car spotting assignments in between regular dozing or towing chores. Coupler-equipped, it can haul up to 1 million gross lbs. on a 1% ascending grade. In practice, this means it can push or pull 18 empty or 5 loaded freight cars.

No time lost clearing track

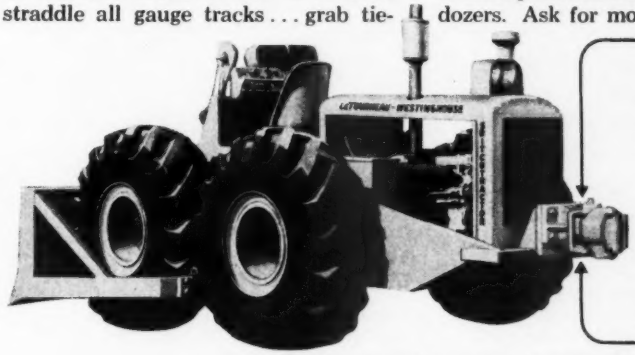
There's no need to clear tracks between your switcher and the cars you want spotted. SwitchTractor speeds to the scene via shortest route — detouring blocked tracks, crossing rails, ties, ditches — traveling by highway, driveway, right-of-way, or along the tracks. Tires flex over obstacles, won't damage switches or chamfer ties.

Operator chooses own route

With SwitchTractor operator picks his own fastest route to job . . . links up cars involved without on-track maneuvering. Big, wide-gauge rubber tires (8'4" width from center to center), straddle all gauge tracks . . . grab tie-ends with *double* the grip of steel wheels on steel rails.

When switching is completed, versatile SwitchTractor speeds back to its regular dozing or equipment-towing duties. There's *no idle time* with this multi-purpose yard tool!

Analyze your scattered car-spotting and dozing activities. You'll find there's a place in your yards for one or more of these powerful combination switcher-dozers. Ask for more details.



Here is close-up view of SwitchTractor, showing drawbar mounting of rig's rail coupler. SwitchTractor is available from your distributor . . . or, if you already own a Tournatractor, it can be fitted with a coupler in the field.

SwitchTractor—Trademark; Tournatractor—Trademark Reg. U.S. Pat. Off. ST-1342-RR-b

LeTourneau-WESTINGHOUSE Company

RAILROAD SALES DIVISION, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

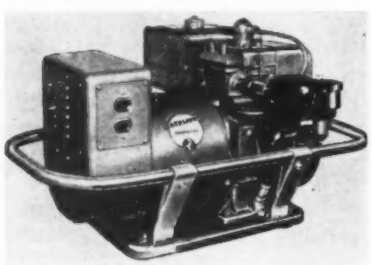
Where quality is a habit

GEARED TO PROGRESS

RPI MEMBER

Like all Thermit welds, the metal is deposited in bulk at one time. The ingredients are finely divided aluminum and metallurgically processed iron oxide, although other elements may be added to produce special alloys. When set off by a special ignition powder, a vigorous reaction takes place; the aluminum combines with the oxygen of the iron oxide

to become aluminum oxide, leaving molten steel. The aluminum oxide floats to the top as slag while the highly liquid steel, produced by the reaction, pours between and around the rail ends to be joined. The parent metal fuses with and intermixes with the fluid metal, producing a fusion joint, which, upon cooling, is said to be stronger than a steel casting. *Metal & Thermit Corp., Dept. RTS, Rahway, N.J.*



POWER PLANT WITH AUTOMATIC CONTROLS

PORTABLE or stationary use may be made of a new series of 1800-rpm air-cooled power plants, which are available with either manual or electric-remote start with automatic control. The electric-remote type is supplied with a special end-bell to accommodate all relays, receptacles and metering devices and utilizes heavy d-c wirings on the armature for starting and also for charging the battery. All models are driven by a Briggs & Stratton four-cycle gasoline engine. For the portable application, these plants can be provided with protective-type carrying brackets or wheeled dollies which are easily attached without special tools. *Katolight Corporation, Dept. RTS, First Ave. at Chestnut, Mankato, Minn.*

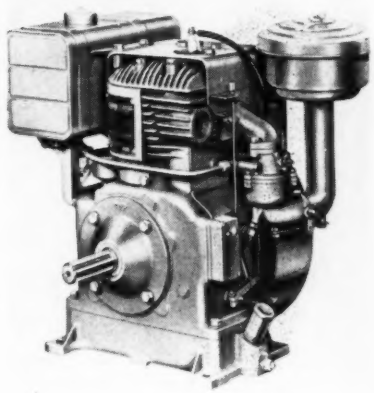
NEW AIR-MOTOR JACKS

TWO NEW jacks, 20 and 35-ton, models 1720-R and 1735-R, respectively, have recently been added to the manufacturer's full line of air-motor equipment. The jacks are lightweight and are transported on large semi-pneumatic tires. The manufacturer points out that an exclusive feature of the new jacks is a toe lift, which slips into place to increase working efficiency when lifting loads that are too low to be handled by the lifting cap on the top of the jack piston. Other features of the jacks include: High-efficiency spur-gearing; pressure lubrication fittings; bronze and anti-friction type bearings; automatic shut-off, an overload safety feature; and motor design with integral air-line lubrication. *Cridland Company, Dept. RTS, Dayton, Ohio.*

NEW SANDER FOR VOLUME PRODUCTION

A NEW UNIVERSAL electric portable sander, combining the features of high volume production with lightweight, has been added to the manufacturer's line of orbital "SpeedSanders."

The new No. 16 SpeedSander designed for both home and industrial use where fast volume turnout is desired. It is powered by a universal series-wound motor for operation on ac or dc, and delivers 6,200 rpm. The sander weighs 5 lb, making it particularly suitable for overhead work, according to the manufacturer. Sanding area of the No. 16 is 4½ in by 5⅛ in; it is 8 in long (9½ in with knob) and has a 10-ft lead cord. The orbit is 3/16 in. The sander is also available in kit form (No. 16K) which includes 18 aluminum oxide abrasive sheet covers, a permanent-type template, two abrasive felt pads, neoprene contour pad, lamb's wool cover and fitted steel carrying case. The SpeedSander is priced at $39.95—the kit being offered at $49.95. *Thor Power Tool Company, Dept. RTS, Aurora, Ill.*



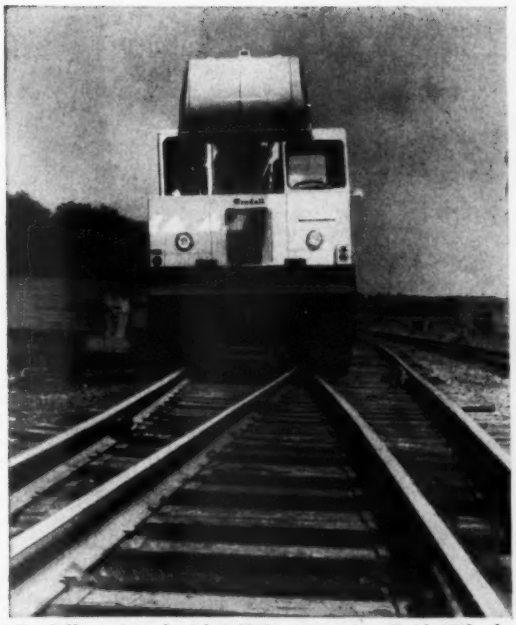
7-HP GASOLINE ENGINE

A COMPLETELY new 7-hp engine is being added to the manufacturer's lines of single-cylinder, 4-cycle gasoline engines. The new Model 19 series engine has a 3-in bore and a 2⅜-in stroke with a piston displacement of 18.56 cu in. It develops 7 hp at 3600 rpm. The cylinder and crankcase are made of close-grained cylinder iron, while the base, cylinder head, bearing supports, piston and connecting rod are made of aluminum alloy, thus keeping the weight of the engine to 78 lb. The carburetor is a concentric-float type; the governor is an adjustable, mechanical type, fully enclosed, running in oil. Ignition is provided by the manufacturer's "Magnematic" ignition system. The breaker points, condenser, radio shielded stop switch and ground wire terminal are mounted in a box on the outside of the crankcase for easy servicing. The spark plug size is 14 mm.

The new Model 19 is also available in other types incorporating the following features: Crankshaft mounted in two shielded ball bearings (Model 19-B); direct mounting crankcase, machine faced and tapped with crankshaft mounted in two shielded ball bearings (Model 19-FB) —6-to-1 gear reduction (Model 19-R6) and engine-equipped with manually operated clutch (Model 19-FBL).

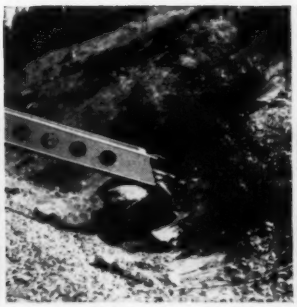
Available as special equipment is a rotating blower screen to keep cuttings and

GRADALL CUTS COSTS ON ALL M/W JOBS!



Gradall, equipped with Self-Compensating Guide Wheels, easily rides across frogs, switches and crossings.

Cleaning drainage ditches, working right from roadbed. Gradall's accurate, fast digging action slashes costs on this type of work.



Complete control of Gradall's telescoping, arm-action boom and the wrist-like action of the bucket enables operator to grasp and remove even large boulders.

No traffic interruptions with a Gradall! When the way must be cleared, the Gradall simply straddles or moves off track while train passes.

Quickly back on the job! Gradall cleans culvert openings, working in close around culverts, without damaging pipe, maintaining proper grade.

Off to the next job—right down the roadbed, with ample clearance for passing trains. Where tracks are closer together, Gradall can straddle track.

Gradall makes fast work of clearing a rock slide. A special rock bucket, attached in less than 5 minutes, easily handles large rocks.

Aligning track on curve, Gradall exerts its powerful hydraulic pressure—pushing or pulling—properly positioning track without moving ballast.

Laying rails, Gradall is used as a crane to quickly and accurately position rails. This is just another of the many "bonus" railroad jobs handled by Gradalls.

Write for a demonstration:

GRADALL DIVISION, WARNER & SWASEY CO.

Cleveland 3, Ohio

Gradall®

DIVISION OF WARNER & SWASEY Cleveland PRECISION MACHINES

® Reg. U. S. Pat. Off.

YOU CAN DO IT BETTER, FASTER, FOR LESS WITH A GRADALL

foreign material out of the engine cooling system. Other special equipment includes an electric starter-generator unit, a starting crank, remote governor and throttle controls, fuel pump, automatic choke and ignition shielding. *Briggs & Stratton Corp., Dept. RTS, Milwaukee 1, Wis.*

VERTICAL SHAFT PORTABLE GENERATOR

AN UPRIGHT portable electric generator in a vertical-shaft design has been made available in two 1,500-watt models. One is designated EG-1.5A for alternating current and the other is designated EG-1.5D for direct current. They provide 13 amp of 115-volt current for the operation of electric drills, saws, hammers, concrete vibrators and other electric tools used on construction sites.

With the vertical shaft, the entire weight of the generator, which in conventional horizontal designs is normally imposed on the main bearing shaft, is supported by tubular framework. Since the engine main bearing and shaft only have to turn the armature, longer life and more efficient service is expected from this design. Other advantages cited by the manufacturer for the vertical design are the simple shock mounting, which isolates the rotating armature action and engine vibration from the frame, and the floating of the entire assembly within the framework, which also serves as a protective guard and carrying handle.

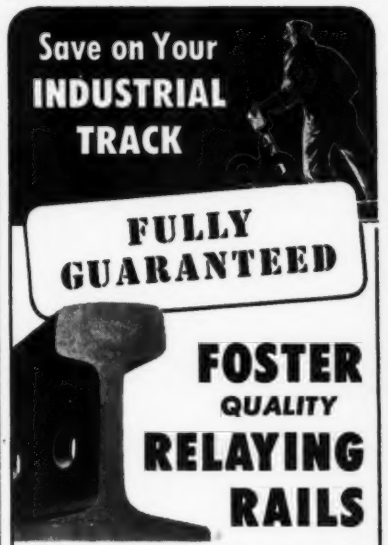
These generators weigh 95 lb each and are 23¾ in. high and 23 in. in diameter. Each has a four-cycle, single-cylinder, air-cooled engine with automatic rewind starter. A toggle-type ignition switch eliminates the shock hazard as well as the inconvenience of shorting straps. Two plug-in outlets are provided and any number of tools or lights with a total power requirement up to 1,500 watts may be used simultaneously. *Thor Power Tool Company, Dept. RTS, Aurora, Ill.*

REDESIGNED HORIZONTAL EARTH-BORING MACHINES

BORING SPEEDS of the Hydrauger horizontal earth boring machines have been increased as much as 40 per cent, according to the manufacturer. The machines have been redesigned and now incorporate high-torque, Ingersoll-Rand, multi-vane air motors. The Hydrauger principle of operation is known as "wet-hole boring." Water, forced through the hollow steel boring bar sections cools the cutting bit, washes cuttings from the hole, and muds the hole walls. The manufacturer claims the improved machines will give longer bit life and faster boring speeds in all types of earth formation. The hole produced by the Hydrauger permits the installation of many types of pipe. The machines are now available in several new sizes and modifications. The larger machines bore holes of from 2 to 24 in. in diameter for distances up to 250 ft. *Hydrauger Corporation, Ltd., Dept. RTS, 681 Market Street, San Francisco 5, Calif.*

PORTABLE KIT FOR MAGNETIC TESTING

WELD INSPECTION, preventive-maintenance inspection and inspection for a limited volume of any magnetic part where surface cracks are suspected can now be made with a portable magnetic-particle tester. Designated the Magnaflux Y-5 Yoke Kit, this instrument is available in a metal carrying case, about the size of a fishing box, and weighs less than 30 lb complete. The yoke itself is the magnetizing and testing instrument and weighs only 7 lb, making it particularly suitable for rapid inspection of the surface cracks typical of fatigue. It draws only 6 amp from any 110-volt ac line and, because it uses ac magnetization, no confusing subsurface indications are said to be developed. The complete kit includes the yoke, Magnaflux powder, powder bulbs, 100 ft of cord, and operating instructions. *Magnaflux Corporation, Dept. RTS, 7300 W. Lawrence Ave., Chicago 31.*



Lower installation and maintenance costs—handle more cars better. Foster nationwide warehouses also stock every New Rail Section 12# through 175#, Switch Material and Accessories to meet your specific job requirements.

SEND FOR CATALOGS RT-4

RAILS - TRACK EQUIPMENT - PIPE - PILING

L B FOSTER co

PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4
ATLANTA 8 • HOUSTON 2 • LOS ANGELES 5

FOR SALE

Six (6) 131 lb. R. E. 39 ft. curved split switches graduated risers, in excellent condition, used only in temporary service. Switch points are curved to a 3201.41 ft. radius. Includes six (6) mechanical helpers for assisting with power operation.

If interested, offer can be forwarded to Purchasing Agent, C.R.R. Co. of N.J., 143 Liberty St., New York 6, N.Y., BArclay 7-9700.

In the same elapsed time . . .

ONE MAN CAN INSTALL TWICE AS MANY NEW BULLDOGS

Both of the men in the photograph above began installing rail anchors at the same starting point, at the same time. Man on the right, installing improved BULLDOG Rail Anchors, outdistanced by better than two to one, the man on the left using the previous model.

This new anchor is easier to install, saves time, frees men for other track duties.

These provable time- and cost-saving advantages of the new BULLDOG come as the result of re-shaping the anchor spring. Now, the installing hammer blow is more directly transmitted to the end of the spring which engages the rail and the spring moves within the clamp with less friction.

High holding power, so long associated with BULLDOG Rail Anchors, has been actually increased not only on initial application but, more important, on reapplication and in *sustained* gripping strength.

Why not let one of our experienced representatives perform this same test for you on your road and explain how the BULLDOG's exclusive features can reduce your maintenance costs. True Temper Corporation, Railway Appliances Division, 1623 Euclid Avenue, Cleveland 15, Ohio.

Other True Temper Railway Products . . .

BULLDOG Ballast Forks, Weed Cutters, BULLDOG Shovels, BULLDOG Safety Rail Forks, Hammers, Sledges, BULLDOG Scythes.

TRUE TEMPER

BULLDOG RAIL ANCHORS

YOU CAN LOOK TO TT FOR LEADERSHIP

THE MONTH'S NEWS...

. . . among railway men—the associations—the suppliers

Changes in Railway Personnel

General

Ernest C. Poole, manager of the Southern Pacific's bureau of transportation research and an engineer through training and experience, has retired. Mr. Poole has been succeeded by **Ferdinand Wascoe,** who joined the SP in 1948 as assistant engineer in the bureau of transportation research and who, at the time of his recent promotion, was serving as assistant manager of the bureau.

Mr. Poole joined the SP as an estimator on railroad construction in 1912 and served with the U.S. Corps of Engineers during World War I. From 1924 until 1928 he served as principal

Ernest C. Poole

assistant engineer during the construction of the SP's Cascade line, and later on the rebuilding of lines at Alturas, Cal., and at Coolidge Dam, Ariz. He left the SP in 1928 and returned in 1933 as asistant engineer in the bureau of transportation and advanced through the positions of engineer and assistant manager until 1945 when he was promoted to manager.

Engineering

Virgil E. Glosup, assistant chief engineer, signals and communications of the Milwaukee Road at Chicago, has been appointed acting chief engineer. **W. G. Powrie,** chief engineer, is on leave of absence because of ill health. **H. B. Christianson,** special engineer at Chicago, retires April 5.

W. Y. Ware, has been named construction engineer and right of way agent on the Gulf, Colorado & Santa Fe at Galveston, Tex.

The New York Central has announced that its Erie division engineer's office at Erie, Pa., has been abolished. The former Erie division territory is now under the jurisdiction of **R. W. Orr,** division engineer at Cleveland, Ohio.

L. E. Bates, assistant chief engineer of the Atlantic Coast Line at Wilmington, N.C., has been promoted to chief engineer, succeeding **R. L. Groover,** who has been promoted to assistant general manager.

Guy E. LaSalle, Jr., has been named bridge engineer on the Spokane, Portland & Seattle at Portland, Ore., succeeding **B. M. Howard,** who has retired.

R. L. Williams, supervisor of track on the Illinois Central at East St. Louis, Ill., has been promoted to assistant engineer in the chief engineer's office at Chicago.

J. Bryan McKerley, acting chief engineer of the Central of Georgia at Savannah, Ga., has been named chief engineer, and **W. S. Ray,** general superintendent of bridges and buildings, has been appointed engineer of bridges and buildings. **W. E. Chapman,** superintendent of maintenance, has been named chief engineer, maintenance.

R. L. Cook, assistant chief engineer of the Central of Georgia at Savannah, Ga., has retired. **Albert C. Stephens,** office engineer, track section, has been promoted to assistant principal engineer, also at Savannah. **Robert K. McKinnon,** engineer of bridges, has been named planning and construction engineer at Savannah.

N. H. Williams, bridge and building master on the Delaware & Hudson at Oneonta, N.Y. has been promoted to division engineer with the same headquarters, succeeding **W. J. Schramm.** Mr. Schramm has been transferred to Albany, N.Y., to succeed **E. E. Crowley,** who has retired, effective April 1.

N. W. Kopp, whose appointment as chief industrial engineer on the Elgin, Joliet & Eastern was recently announced (*RT&S,* Feb., p. 56), was born September 30, 1917 at Lismore, Minn. He attended the University of Iowa where he received a B.S. degree in civil engineering in 1939, and began his railroad service with the Illinois Central as a chainman at Memphis, Tenn., in January 1940. In August of that same year he was advanced to rodman and served in this capacity until being promoted to assistant supervisor of track on the Mississippi division in October 1942. He was promoted to supervisor of track on the same division in 1944 and was appointed assistant engineer in the bridge department in Chicago in January 1946. He was named assistant engineer in the office of the vice-president and chief

N. W. Kopp

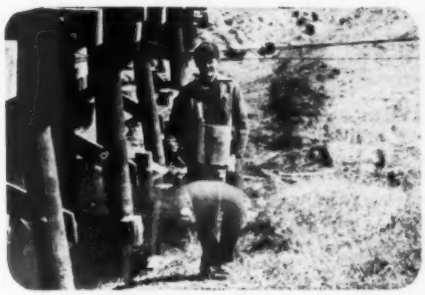
engineer at Chicago in December 1946, and was advanced to assistant engineer of design in that same office in August 1948. He was promoted to engineer of design in August 1949 and held this position until being appointed division engineer on the Mississippi division in April 1950. He was promoted to principal assistant engineer in 1955—the position he held at the time of his recent appointment.

Rufus D. White, whose promotion to assistant division engineer on the St. Louis-San Francisco at Chaffee, Mo., was recently announced (*RT&S,* **Feb.,** p. 56), was born October 30, 1926, at Eufaula, Ala. He graduated from Alabama Polytechnic Institute and entered the service of the Frisco on August 30, 1950, as a student apprentice at Chaffee. After serving in this capacity at Springfield, Mo., and as student supervisor at St. Louis, he was, on March 1, 1953, promoted to assistant roadmaster at Oklahoma City, Okla. On July 1, 1954, he was promoted to roadmaster at Chaffee, in which position he served also at Ft. Worth, Tex., from February 1, 1956, until the time of his recent promotion.

William D. Wood, whose promotion to assistant bridge engineer on the Chesapeake & Ohio at Richmond, Va., was recently announced (*RT&S,* Jan., p. 54), was born July 8, 1920, at Earlys-

LOOK...AT THIS EASIER, THRIFTIER WAY TO STOP WEEDS

COMPARE THE RATE—Enough UREABOR weed killer to treat 12 square feet is held in this hand! Consider the convenience and economy afforded by a rate of application as low as 1 lb. per 100 square feet of area.



COMPARE THE EASE—Applying UREABOR weed killer is as easy as walking! By actual test, one man spreading this granular material *dry* with the PCB Spreader can cover a given area in less time than can a two-man spray crew.

COMPARE THE RESULTS—The killing effect of UREABOR continues throughout a season or more! A single application can mean a weed-free surface. Roads from coast to coast are using UREABOR to get the lasting control it provides.

COMPARE THE COSTS—UREABOR kills weeds for pennies; saves you dollars! It is low priced... your initial outlay is small. Further economy comes from low rates of application, savings of man-hours, and convenience in handling and storage.

COMPARE... 20 MULE TEAM UREABOR® WEED and GRASS KILLER

The PCB Spreader applies Ureabor quickly and uniformly at low rates. It holds enough Ureabor to treat up to 2500 sq. ft. without refilling. Available for $10.75 delivered —anywhere in U.S.A.

UREABOR invites comparison with all other weed killers from any standpoint. What is your gauge of measurement? Is it EFFECTIVENESS? ...SAFETY? UREABOR is effective and safe in every respect. It is *nonflammable, noncorrosive* to ferrous metals, *nonpoisonous* when used as directed. No product is easier to apply... there is nothing to mix; no water to haul. Check all the advantages of UREABOR and you'll agree that it stands alone. Write for literature.

AGRICULTURAL SALES DEPARTMENT

United States Borax & Chemical Corporation

PACIFIC COAST BORAX COMPANY DIVISION

630 SHATTO PLACE, LOS ANGELES 5, CALIFORNIA

ville, Va. He attended the University of Virginia and on August 12, 1946, joined the C&O as a bridge designer—the capacity in which he was serving when he received his recent promotion.

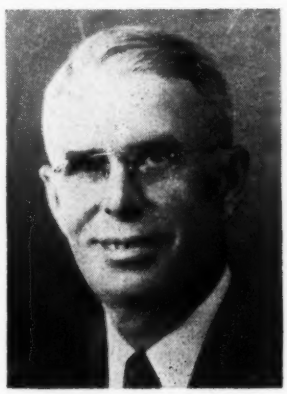
T. D. Kern, whose promotion to office engineer on the Illinois Central at Chicago was recently announced (*RT&S*, Feb., p. 56), was born March 16, 1920 at Mounds, Ill., and began his railway service with the Illinois Central on June 5, 1940, serving as a chainman and rodman at Paducah, Ky., until he entered the armed forces in 1942. Following his tour of military service, he attended the University of Virginia and graduated in 1949 with a B.S. degree in civil engineering. Immediately following his graduation, he rejoined the road and served successively as instrumentman, assistant supervisor of track and supervisor of track. He was appointed assistant to division engineer in 1953 and, in 1956, was promoted to division engineer—the position he held at the time of his recent promotion.

James H. Brown, whose promotion to assistant chief engineer, construction, system, on the St. Louis-San Francisco at Springfield, Mo., was recently announced (*RT&S*, Feb., p. 58), was born November 27, 1926, at St. Louis, Mo. He graduated from the University of Missouri in August 1948 and, the following month, joined the Frisco as a student apprentice at Chaffee, Mo. He worked in this capacity at Memphis, Tenn., and as student supervisor at St. Louis until October 15, 1950, when he was promoted to assistant roadmaster at Ft. Worth, Tex. On May 15, 1951,

James H. Brown

he was promoted to roadmaster at Chaffee and on August 1, 1954, was named assistant division engineer at Ft. Scott, Kan. He was promoted to division engineer at Ft. Worth on October 1, 1955—the position he held at the time of his recent promotion.

Ralph E. Patterson, whose retirement as chief engineer of the Lehigh Valley at Bethlehem, Pa., was recently announced (*RT&S*, Feb., p. 56), was born March 9, 1889, at Bangor, Me. He graduated from the University of Maine in 1911 and, in October of the following year, joined the LV engineering corps at Buffalo, N.Y. He was named assistant engineer at Buffalo in 1916 and, in 1920, was promoted to division engineer at Hazleton, Pa. He served in this capacity at Sayre, Pa., and Easton until 1937 when he was promoted to assistant to the chief engineer at Bethlehem. In 1940, he was named engineer maintenance of way and, in 1942, was promoted to chief engineer, construction and maintenance



Ralph E. Patterson

TIE PLATE LOCK SPIKES . . . GAGE LOCK SPIKES

Hold Gage—Extend Tie Life

Reduce Maintenance

Tie Plate Lock Spike

Gage Lock Spikes in Track

Gage Lock Spike

TIE PLATE LOCK SPIKES hold tie plates firmly in place on cross-ties and bridge timbers. They are quickly and easily driven or removed with standard track tools. Driven to refusal, the spread shank is compressed by the walls of the hole. Plates are held against movement under spring pressure. Play between spike and hole is eliminated—gage is held and plate cutting is overcome.

The GAGE LOCK SPIKE is a rail spike, as well as a plate fastening, for use on tangent track and light curves where lateral thrust can be overcome with only two spikes at each plate rather than four cut spikes. It possesses the same features and advantages as the Tie Plate Lock Spike. The Gage spike is offset at the tie plate surface to avoid thrust and wear from the edge of the rail base. The use of Gage spikes saves up to 13,000 spikes per mile and potential damage to the tie from spiking and splitting is drastically reduced.

BERNUTH, LEMBCKE CO., INC.

420 Lexington Avenue, New York 17, N. Y.

WORLD'S SAFEST POWER SAW

NO DANGEROUS CHAIN

•hand saw safety
•power saw speed

Photo Courtesy of C. B. & Q. Railroad

GAS all-new

WRIGHT® REBEL

20" RECIPROCATING BLADE

Saves time, money on 1001 jobs: Cuts sheathing, piling, concrete forms, ties; does *precision* mill-edge cutting; clears land; ideal for bridge-work and wrecking.

- Cuts in all positions.
- Sharpen blades in 5 min.—right on the job!
- Minimum maintenance, lowest upkeep.
- Operator needs no special training
- Less than 25 lbs. complete.

ONLY **$189.50***

pneumatic AIR

WRIGHT® CYCLONE

21" RECIPROCATING DOUBLE BLADE

Exceptionally lightweight—big capacity. No fumes... no spark hazard. Actually cuts under water! Connect to any 60 cu. ft. compressed air supply...does everything the *Rebel* does!

- Slices 12 x 12's in less than a minute.
- Unbreakable blades.
- Only 14½ lbs. total!
- Precision cuts—even in 12" radius!

ONLY **$295.00***

*Prices include blades. F.O.B. Factory, Sheboygan. Prices apply in U.S. only.

WRIGHT AIR LINE OILER

Gives trouble-free lubrication to Wright Air Saw or other pneumatic tools. Meters oil into air supply. Light weight 1¾ lbs. ½ pint capacity. Non-clogging, works in any position. ONLY **$19.95**

DEALERSHIPS AVAILABLE

FREE FOLDERS TELL HOW TO STREAMLINE YOUR CUTTING JOBS!

WRIGHT POWER SAW AND TOOL CORP.

Subsidiary of THOMAS INDUSTRIES INC.

Executive Offices: 410 S. Third Street, Louisville 2, Ky. Dept. 45-D

Factories at Sheboygan and Ft. Atkinson, Wis.; Hopkinsville and Princeton, Ky.; Los Angeles 22, Cal.; Ft. Smith, Ark.

☐ Send me the facts on the new Wright Rebel (gasoline)
☐ Send me your folders on the Wright Cyclone (pneumatic) and oiler
☐ I am interested in becoming a dealer.

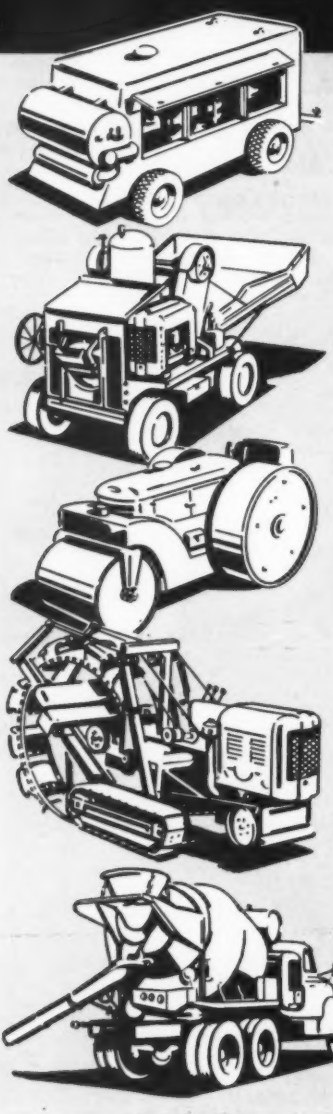
NAME_____

COMPANY (if any)_____

ADDRESS_____

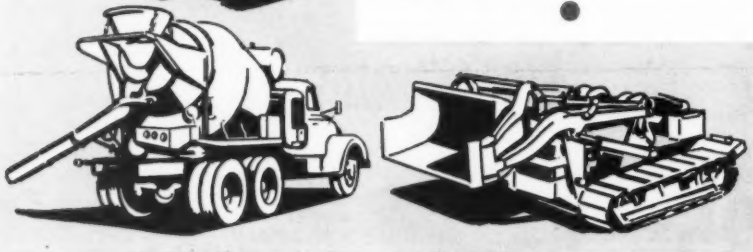
CITY_____ ZONE____ STATE_____

MORE THAN 100 BASIC ENGINES,
BUILT TO 2,000 DIFFERENT SPECIFICATIONS,



EQUIP CONTINENTAL WITH POWER PLANTS TAILORED TO THE NEEDS OF CONSTRUCTION MACHINERY OF PRACTICALLY ALL SIZES AND TYPES

Continental Red Seals for specialized applications are available at closely-spaced power levels, in liquid-cooled and air-cooled models, for use on all standard fuels. And, strictly on the score of performance, economy and dependability, they are finding their way into more and more leading makes of road building and construction equipment for every operation from excavation on through final grading. Every Continental Red Seal is not only built for its job, but backed by parts and service facilities from coast to coast.



A COMPLETE LINE OF SMALL AIR-COOLED ENGINES

In addition to its large engines, Continental builds an outstanding line of heavy-duty air-cooled four-cycle models for industrial applications requiring 2 to 4 h.p. Advanced engineering gives them easy starting, high dependability, and unusual lugging capacity at low speeds. For information, address Air-Cooled Industrial Engine Division, 12800 Kercheval Avenue, Detroit 15, Michigan.

CONTINENTAL MOTORS — Powerful as the Nation — AMERICA'S STANDARD

Continental Motors Corporation
MUSKEGON • MICHIGAN

6 EAST 45TH ST., NEW YORK 17, NEW YORK • 3817 S. SANTA FE AVE., LOS ANGELES 58, CALIF.
6218 CEDAR SPRINGS ROAD, DALLAS 9 TEXAS • 1252 OAKLEIGH DRIVE, EAST POINT (ATLANTA) GA.

Railway Personnel (Cont'd)

—the position he was holding at the time of his recent retirement.

Raymond E. Clancy, whose promotion to division engineer on the Gulf, Colorado & Santa Fe at Temple, Tex., was recently announced (*RT&S*, Dec., p. 80), was born November 10, 1926, at Springfield, Ill. Upon graduation from the University of Illinois in 1947, he entered

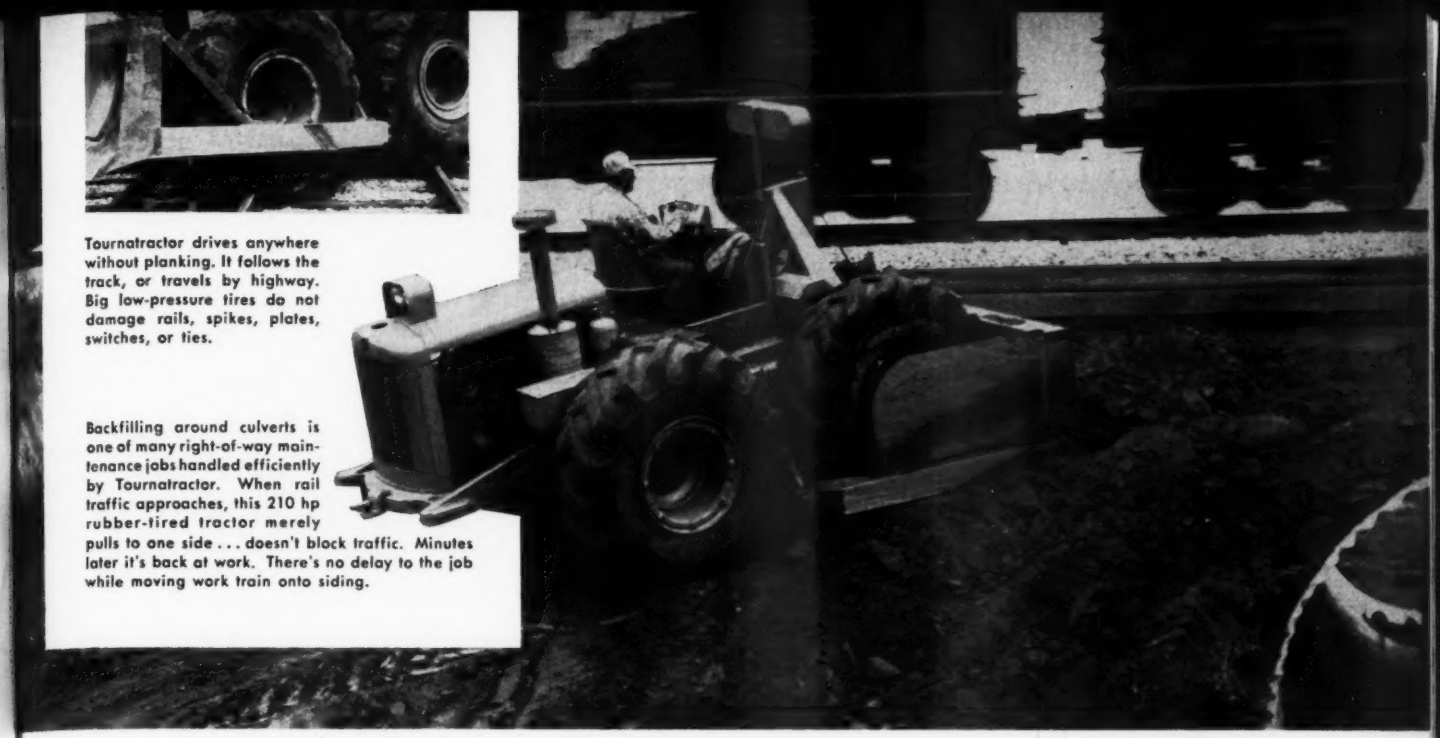
Raymond E. Clancy

the service of the Santa Fe and on January 1, 1950, was appointed assistant roadmaster at Amarillo, Tex. From March 1951 until March 1953 he served with the U. S. Navy and on February 1, 1954, rejoined the Santa Fe as roadmaster at San Angelo, Tex.—the position he held at the time of his recent promotion.

A. L. Sams, whose promotion to principal assistant engineer on the Illinois Central at Chicago was recently announced (*RT&S*, Feb., p. 56), was born

A. L. Sams

July 9, 1917, at Brownsville, Ohio. He joined the IC as a chainman in June 1941 upon graduation from Purdue University. In August 1942, he was named rodman and in November of the same year was promoted to assistant supervisor of track. In October 1943, he was named supervisor of track and in September 1944, was promoted to assistant trainmaster, which position he held until 1946 when he was named assistant



Tournatractor drives anywhere without planking. It follows the track, or travels by highway. Big low-pressure tires do not damage rails, spikes, plates, switches, or ties.

Backfilling around culverts is one of many right-of-way maintenance jobs handled efficiently by Tournatractor. When rail traffic approaches, this 210 hp rubber-tired tractor merely pulls to one side . . . doesn't block traffic. Minutes later it's back at work. There's no delay to the job while moving work train onto siding.

How to handle scattered RR maintenance jobs

FASTER . . . CHEAPER

Handle your scattered RR maintenance jobs faster . . . more economically . . . with only one man and a high-speed rubber-tired Tournatractor®. This versatile tractor always travels the *quickest* route to any assignment — at speeds to 17 mph — over tracks, highway, cross-country, or along right-of-way. Big low-pressure tires flex harmlessly over obstacles . . . do not damage rails, switches, nor chamfer ties.

Makes right-of-way repairs before damage gets serious

Powerful 210 hp Tournatractor handles your right-of-way maintenance fast . . . makes repairs before damage becomes serious. Equipped with dozer blade or angledozer, this rubber-tired tractor improves drainage, replaces eroded fills, repairs shoulders, cuts down banks, reinforces causeways and bridge approaches. One man, with a Tournatractor, can keep many miles of your line in tip-top condition for less than it used to cost to repair one major wash-out. Tournatractor needs no work train or crews . . . doesn't disrupt or delay rail traffic . . . easily drives off right-of-way at approach of train.

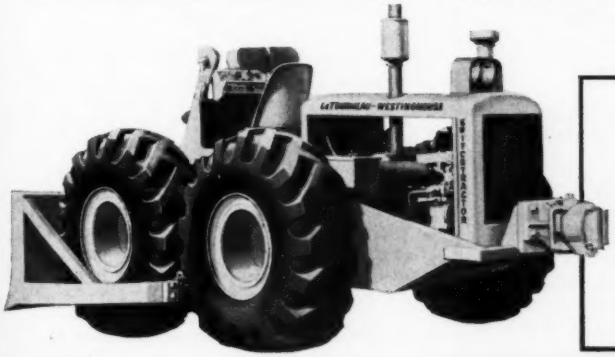
Handles variety of jobs

When maintenance and repair work is completed, Tournatractor is a profitable tool for stockpiling coal, cinders or ballast. Its big low-pressure tires compact and seal coal piles against spontaneous combustion. This versatile tractor-on-rubber also builds sidings . . . push-loads scrapers . . . pulls scrapers, other heavy equipment . . . plows snow, and spots railroad cars.

For complete information

Why not investigate the high-speed LeTourneau-Westinghouse Tournatractor? With its off-track mobility and versatility, this rubber-tired tractor can make important time and money savings for your line. Call or write for complete details.

*Trademark CT-1417-RR-b



SwitchTractor* — a standard 210 hp Tournatractor, equipped with Type E railway car coupler on the rear — handles scattered switching duties fast. This off-track switcher drives directly across yards, fields, ditches, for quick spotting, grouping of cars. SwitchTractor's big rubber-tired wheels straddle rails, ride on ballast and tie-ends. Tires give 60 percent coefficient of friction — *double* the tractive effort of steel-wheeled switchers rolling on smooth steel rails.

LeTourneau-WESTINGHOUSE Company

RAILROAD SALES DIVISION, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

GEARED TO PROGRESS
P R I
MEMBER

Complete, year-round grounds maintenance is no job at all with Gravely!

The precise control, amazing ease of operation and riding comfort of the Steering Sulky with 75"-cut Gang Mowers make large-area mowing almost child's play. Rotary and Sickle Mower attachments take care of the smaller areas, right-of-ways, etc. Now, new Lawn Sweeper also available.

1 Powerful Tractor—30 Attachments

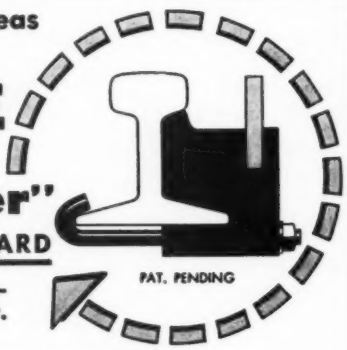
In all, the powerful Gravely offers 30 sturdy, performance-proved tools that solve every 12-month maintenance job—*Faster! Better! Easier!* . . . All-gear Drive, Power Reverse, Precision Control, Push-Button Starter.

Free "Power vs Drudgery" Booklet tells you all about America's most efficient, most versatile small tractor. Write for it TODAY!

GRAVELY TRACTORS, INC.
BOX 42 DUNBAR, W. VA.
PERFORMANCE-PROVED SINCE 1922

For the Smoothest Paved Areas over Railroad Tracks . . .

Use **KASLE IMPROVED "Guardmaster" FLANGEWAY CROSSING GUARD**



Smooth Durable Crossings — Low Installation and Maintenance Cost. Write today for Brochure.

TRACKWORK of ALL KINDS

Rails of all sizes, Splice Bars, Bolts, Spikes, Tie Plates, Frog and Switch Materials, Tools, etc. Railroad Track Material inquiries invited.

KASLE STEEL CORPORATION

P. O. Box 536 • Detroit 32, Michigan • Tiffany 6-4200

Railway Personnel (Cont'd)

engineer in the office of the vice-president and chief engineer at Chicago. From August 1949 until April 1950, he was assistant engineer of design, becoming engineer of design on the latter date. He was promoted to office engineer in April 1952—the position he held at the time of his recent promotion.

L. E. Brault, whose promotion to division engineer on the Illinois Central at Memphis, Tenn., was recently announced (*RT&S*, Feb., p. 56), was born January 28, 1916 at Chicago, and was graduated from Lewis Institute of Technology in 1939 with a B.S. degree in civil engineering. He entered the service of the Illinois Central on November 1, 1940, as a chainman and rodman, on the road's Louisiana division at McComb, Miss. He entered

L. E. Brault

military service in March 1943 and served three years with the U. S. Navy, after which he returned to the Illinois Central and was advanced to assistant supervisor of track in 1948 at Carbondale, Ill. He was promoted to supervisor of track at that point in October 1949 and subsequently held this position at Baton Rouge, La., and Decatur, Ill. He was named assistant to division engineer in 1956—the position he held at the time of his recent promotion.

A. E. Smith, division engineer on the Missouri-Kansas-Texas at Parsons, Kan., has been promoted to assistant to the chief engineer, maintenance of way and structures, Northern division, at Dallas, Tex. **J. H. Hughes** and **V. T. Huckaby,** assistant division engineers at Parsons, have been named maintenance engineers at Dallas, reporting to Mr. Smith. **E. P. Kennedy,** division engineer at Waco, Tex., has been promoted to assistant to the chief engineer, maintenance of way and structures, Southern division, also at Dallas. **J. T. Hunter,** assistant division engineer at Waco, has been named maintenance engineer at Dallas, reporting to Mr. Kennedy.

Stewart B. Austin, whose promotion to chief engineer of the Georgia & Florida was recently announced (*RT&S*, Feb.,

Early in 1955 the main line of the Southern Pacific in the Sacramento area was treated with 1.2 lbs. of Du Pont "Telvar" W per foot-mile. A year later a similar low dosage rate was applied. Note the excellent results shown above.

For low-cost, long-term weed control use Du Pont **TELVAR**® weed killers

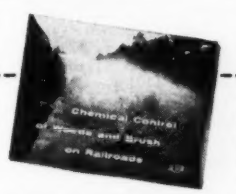
monuron and diuron

For weeds and grasses...Du Pont "Telvar" Weed Killers, used separately or in combination with other herbicides, provide long-term control that cuts yearly maintenance costs. Few chemical herbicides, if any, have excelled "Telvar" in holding weed control on a maintenance basis. In some areas, rates as low as ten pounds per acre applied just once a year have done the job. Where weeds are annuals, a single, low-dosage application often suffices for initial weed problems, too. Available in two formulations: "Telvar" W and "Telvar" DW.

On all chemicals, follow label instructions and warnings carefully.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY



For copy of the new 24-page free color brochure, "Chemical Control of Weeds and Brush," use coupon at right.

E. I. du Pont de Nemours & Co. (Inc.),
Grasselli Chemicals D-4032, Wilmington, Delaware.

Please send me your brochure A-2678, "Chemical Control of Weeds and Brush."

Name_____

Firm_____

Address_____

City_____ State_____

ADD LIFE

TO YOUR

TIMBER BRIDGES

■ AVOID expensive replacement jobs. OSMOSE special in-place preservative (Pentachlorophenol) treatment can add 25 years useful life to standing timber structures AT ONLY 5% OF THE REPLACEMENT COST.

Our exclusive techniques, equipment, specially-trained crews and a patented pentachlorophenol solution (to eliminate fire hazard) make this BRIDGE MAINTENANCE SERVICE a "must" in your budget.

HOW OSMOSE BRIDGE-SPRAY SERVICE WORKS

You select the structures (bridges, wharves, etc.) and *at no cost to you* Osmose engineers thoroughly examine them. Our quotation covers the cost of the above-ground maintenance treatment, and as a separate item our famous OSMOPLASTIC below-ground piling treatment. Complete data reports come to you at the conclusion of each job.

WRITE US for details! See what we have accomplished for the G.M.&O. and others. We can do it for *you!*

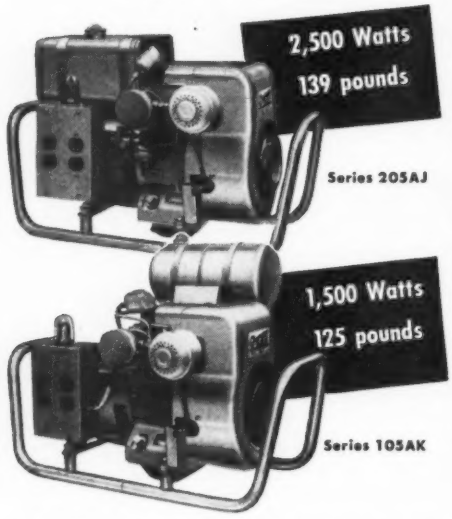
We Are Wood Maintenance Specialists

OSMOSE

OSMOSE WOOD PRESERVING CO. OF AMERICA, INC.
980 ELLICOTT STREET BUFFALO 9, N. Y.

YOU GET *4-cycle* DEPENDABILITY AND *Light weight* TOO . . . IN AN

ONAN Electric Plant



These power-packed electric plants give you all the *4-cycle* advantages of quick starting, long life and trouble-free operation . . . with an amazing weight saving over usual 4-cycle plants. You can carry them easily to any spot . . . and you can count on them delivering their full rated capacity as long as you need it. Both are single-cylinder, air-cooled . . . completely equipped and ready to go.

Other models to 75,000 watts.

Write for special folder on lightweight models!

D. W. ONAN & SONS INC.

Onan ELECTRIC PLANTS

3909 University Ave. S. E., Minneapolis 14, Minnesota

Railway Personnel (Cont'd)

p. 56), was born July 30, 1918, at Augusta, Ga. He entered railroad service February 15, 1941, as an instrumentman with the G&F and, in October of that year, was named assistant engineer at Augusta. After serving with the U. S. Army from July 1944 until January 1946, he rejoined the G&F as assistant engineer at Augusta and, in October

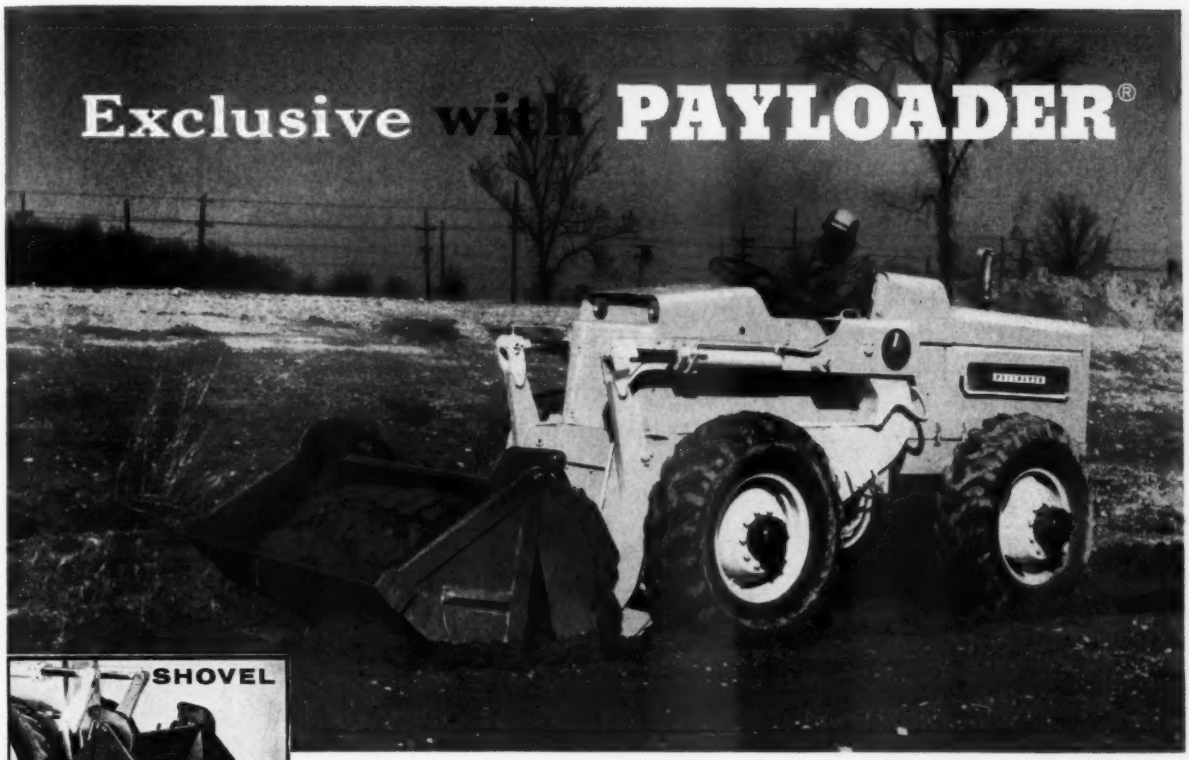
Stewart B. Austin

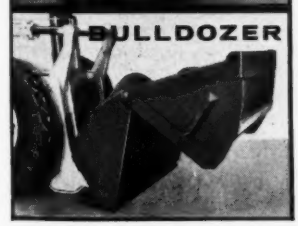
1947, was promoted to supervisor of track at Vidalia, Ga. He returned to Augusta in July of 1948 as principal assistant engineer and in July 1952 was promoted to acting engineer maintenance of way and structures. He was named engineer maintenance of way and structures in August 1953—the position he held at the time of his recent promotion.

Paul J. Harnish, whose promotion to assistant regional engineer on the Pennsylvania at New York was recently announced (*RT&S*, Feb., p. 58), was born

Paul J. Harnish

November 8, 1916, at Altoona, Pa. He graduated from Pennsylvania State College in 1938 and served on the PRR's engineering corps at Terre Haute, Ind., Indianapolis, and Chicago from July 1939 until August 1, 1941. From the latter date until October 16, 1944, he served as assistant supervisor of track at Cresson, Pa., Huntingdon and Lewistown. He served as supervisor of track





The DROTT 4-in-1 Buckets

Drott 4-in-1 Buckets are now available for three sizes of 4-wheel-drive "PAYLOADER" tractor-shovels. One of these multi-purpose buckets teamed with "PAYLOADER" rubber-tired traction and power gives you a combination of quick to-the-job mobility and on-the-job versatility never before available for railroad maintenance-of-way and yard work. Other useful attachments include hydraulic back hoe, snow plows, fork lifts, winches.

These 4-wheel-drive "PAYLOADER" units feature power-transfer differentials that give them reliable traction on sand, mud, snow, ice. They can travel on streets and highways at speeds up to 24 mph, walk across rails, along ties, up banks. No-stop power-shift transmissions and many other proven features make them the most versatile and productive tractor-shovels you can own. Full details of these "one-man work gangs" can be had from any "PAYLOADER" Distributor — and a demonstration too.

Drive to *any* job!
Handle *many* jobs—

- **Load, carry, spread ballast**
- **Maintain shoulders**
- **Dig trenches, clean ditches**
- **Clear slides, wash-ins**
- **Clear brush land**
- **Handle coal, ashes**
- **Load and plow snow**
- **Handle ties, rails, steel, stumps**
- **Bulldoze and strip**
- **Backfill culverts, abutments**

THE FRANK G. HOUGH CO.
751 Sunnyside Ave., Libertyville, Ill.

Send full data on 4-wheel-drive "PAYLOADER" models with Drott 4-in-1 Bucket as checked:

☐ model HO 2¼ yd. ☐ model HH 1½ yd. ☐ model HU 1 yd.

Name _____

Title _____

Company _____

Street _____

City _____ State _____

61

PAYLOADER®
MANUFACTURED BY
THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

To *speed* your lifting, digging, handling, pile driving jobs . . .

BANTAM
is just the ticket on-track or off!

Travels and works on rubber or flange wheels

You get both with a BANTAM—job versatility *and* travel versatility. That's why one low-cost BANTAM can do the work of a whole fleet of specialized equipment.

Let the BANTAM save you money and man power on all kinds of construction, maintenance-of-way and cleanup work. Quick-change attachments give you speedy completions of every assignment—lifting, loading, digging, handling, pile driving, steel erecting, concrete pouring, etc.

You can have the BANTAM for traveling and working on both rubber and flange wheels. Travel tracks for on-track work . . . simply drive off at any grade crossing for off-track travel and work.

Fast cycle, easy control, low operating cost, simple maintenance . . . these plus the industry's *only* carrier built by the same manufacturer that produces the upper—all assure peak performance and top savings over more years of wide-range work. Simplified remote control available—where the operator repositions the truck right from the crane cab.

Find out about a BANTAM before you buy any crane-excavator. Mail coupon.

SCHIELD Bantam Co. RT-128

284 Park Street, Waverly, Iowa, U.S.A.

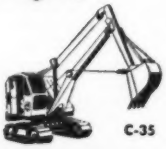
Please forward information on BANTAM
( ) carrier mounted, ( ) crawler mounted, ( ) self-propelled,
( ) special rail wheel model.

Name.....

Company.....Title.....

Address.....

City.....Zone....State.....



WORLD'S LARGEST PRODUCER OF TRUCK CRANES AND EXCAVATORS

Railway Personnel (Cont'd)

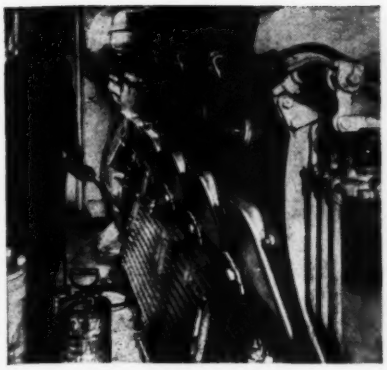
at Orrville, Ohio, Alliance and Chicago until December 1, 1951, when he was promoted to assistant division engineer at Pittsburgh, Pa. From November 1, 1954, until November 1, 1955, he served as division engineer at Camden, N.J., and, on the latter date, was promoted to district engineer at Ft. Wayne, Ind.—the position he held at the time of his recent promotion.

Joseph T. Schoener, whose promotion to assistant engineer of structures on the Missouri Pacific at St. Louis, Mo., was recently announced (*RT&S*, Feb., p. 56), was born March 13, 1897, at St. Louis. He received his higher education from ICS and Washington University and entered railroad service in 1921 as an architectural draftsman for the MP.

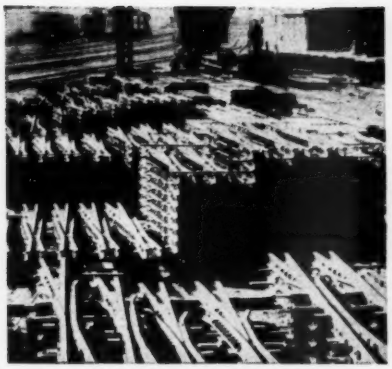
Joseph T. Schoener

After working for an architectural firm, he rejoined MP in 1926, leaving the railroad in 1931 to work, consecutively, with an architectural firm, the City of St. Louis, the Corps of Engineers and the Veterans Administration. In November 1947 he rejoined the MP as supervising architectural designer—the position he held at the time of his recent promotion.

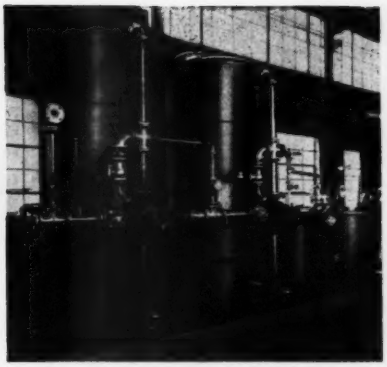
Otto E. Fort, whose promotion to assistant chief engineer, maintenance, on the St. Louis-San Francisco at Springfield, Mo., was recently announced (*RT&S*, Feb., p. 58), was born August 24, 1907, at Moberly, Mo. He graduated from the University of Missouri in 1938, having worked as a transitman for the Wabash in 1929-30. He joined the Frisco in January 1938 and, until September 1950, served in various capacities in the road's bridge department at Springfield. In October 1950 he was named assistant roadmaster at Tulsa, Okla. In December of the same year he was named roadmaster at Enid, Okla., serving in that same position also at Springfield until January 1954 when he was promoted to assistant division engineer at Chaffee, Mo. In May 1954 he was promoted to division engineer at Ft. Worth, Tex. At the time of his recent promotion, he was serving as division engineer at Springfield.



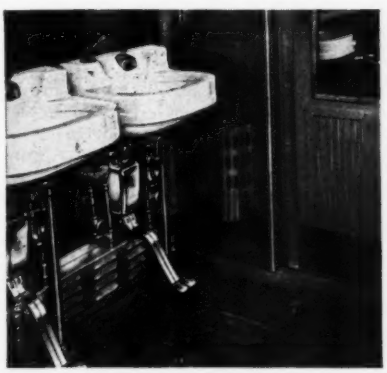
Cleaning diesel interiors



Outdoor storage protection

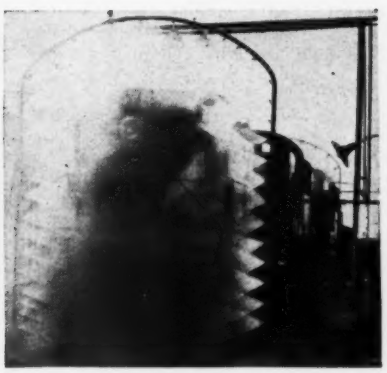


Systems for mineral-free water

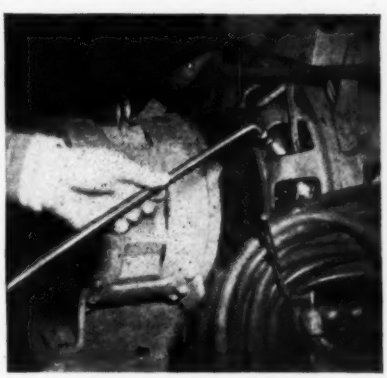


Cleaning and de-odorizing

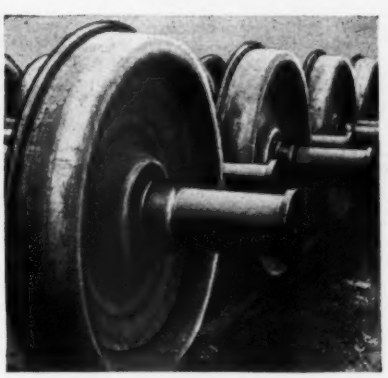
NO-OX-ID® protects bridges



High-pressure spray washing



Cleaning electrical equipment



NO-OX-ID keeps rail joints, switches, signals, car journals corrosion-free

In the shop... along the way

DEARBORN SAVES AS IT PROTECTS

Dearborn's products and services save money and improve railroad maintenance. This coupon will bring you complete details.

Dearborn®

Serving America's railroads for 70 years

Dearborn Chemical Company
Dept. RTS, Merchandise Mart Plaza, Chicago 54, Ill.

Please send details on Dearborn's complete railroad service.

Name.....*Title*.....

Railroad.....

Address.....

City.....*Zone*.....*State*.....

Railway Personnel (Cont'd)

Track

Sam M. Sims has been named assistant track supervisor on the Southern at Eutaw, Ala., succeeding **Charles M. Lumpkin.**

J. C. Waldrop, supervisor of track on the Central of Georgia at Macon, Ga., has been appointed process superintendent—track, at that location.

R. D. Jackson, assistant supervisor of track on the Illinois Central at Memphis, Tenn., has been promoted to supervisor of track at Mendenhall, Miss., succeeding **M. L. Atkins,** who has been transferred to East St. Louis, Ill., replacing **R. L. Williams,** whose promotion to assistant engineer is noted elsewhere in these columns.

Lloyd E. Hobbs, whose promotion to roadmaster on the St. Louis-San Francisco at Hugo, Okla., was recently announced (*RT&S*, Feb., p. 63), was born May 6, 1927, at Chicago. He attended Canterbury College and Tri-State College and, in 1951, entered the service of the Frisco as a rodman at Ft. Smith, Ark. On March 4, 1952, he was promoted to instrumentman and on January 1, 1953, began service as a student apprentice at Chaffee, Mo. He served in this capacity also at Tulsa, Okla., where, in 1955, he was named student apprentice. On July 1, 1955, he was promoted to assistant roadmaster at the Kansas City (Mo.) terminal—the position he held at the time of his recent promotion.

George W. Guinn, Jr., whose promotion to supervisor of track on the Richmond, Fredericksburg & Potomac at Potomac yard, Alexandria, Va., was recently announced (*RT&S*, Jan., p. 56), was born June 17, 1928, at Lexington, Va. He attended the Virginia Military Institute and on November 3, 1953, joined the RF&P as a student engineer at Richmond. After serving in this capacity at Fredericksburg, Va., and again at Richmond, he was named junior engineer at Richmond in December 1955. In June 1956 he was promoted to assistant supervisor of track at Richmond—the position he held at the time of his recent promotion.

Special

V. M. Oswalt has been appointed superintendent, maintenance equipment, on the Central of Georgia with headquarters at Macon, Ga.

Maynard W. Krug, whose promotion to supervisor of methods and cost control on the Pennsylvania at Buffalo, N.Y., was recently announced (*RT&S*, Feb., p. 64), was born March 14, 1927, at Yonkers, N.Y., Upon graduation from Rensselaer Polytechnic Institute in June 1951, he entered the service of the PRR as a junior engineer at New Brunswick, N.J. He was promoted to assistant track supervisor in April 1952 in which position he served at Northumberland, Pa., and Newport until November 1955 when he was promoted to track supervisor at Anderson, Ind.—the position he held at the time of his recent promotion.

Bridge & Building

R. A. Youngblood, supervisor bridges and buildings on the Central of Georgia at Savannah, Ga., has been named process superintendent—bridges and buildings, at that location. **G. W. Benson,** superintendent of bridges at Macon, Ga., has been named superintendent—structures and material, and **J. G. Watwood** has been appointed assistant superintendent—structures and material, both at Macon.

Obituary

L. H. Robinson, retired division engineer on the Canadian National, died recently at Oakville, Ont., at the age of 78.

Frank R. Layng, retired vice-president and chief engineer of the Bessemer & Lake Erie, died on March 10.

C. S. Kirkpatrick, who retired in 1951 as chief engineer of the Gulf Coast Lines and the International Great Northern (subsidiaries of the Missouri Pacific), died on March 1.

Association News

Northwest Maintenance of Way Club

The next meeting will be held on April 25 at the usual place, the Midway Civic Club, 1931 University avenue, St. Paul, Minn. The Portland Cement Association will present a program on prestressed concrete for railway bridges. Films showing the construction of a new bridge across Lake Ponchartrain will be shown. Officers for the ensuing year will be elected at this meeting.

Supply Trade News

Earl W. Ball has been named manager of railroad sales for **Esso Standard Oil Company,** New York, succeeding **Frederick C. Davern,** retired.

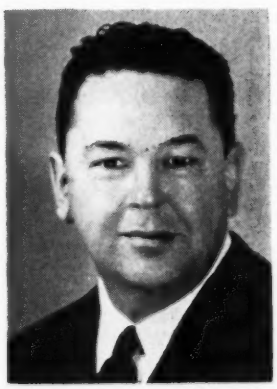
George H. Redding, Jr. has been elected president of the **Massey Concrete Products Company,** Chicago, succeeding his father, **George H. Redding,** deceased. **W. Lyle McDaniel** has been elected executive vice-president.

Martin A. Lewis, assistant to the vice-president for promotion of the **Portland Cement Association,** Chicago, has been named to the additional post of coordinator of interstate highway promotion. Assisting Mr. Lewis is **Homer A. Humphrey,** manager of the association's personnel training classes, who has been named senior highway consultant. **Warren G. Burres,** of the Association's structural and railways bureau, has been named manager of personnel training, succeeding Mr. Humphrey. **George H. Paris,** assistant to the vice-president for promotion, has been named director of promotion planning and engineering services, succeeding **Leo H. Corning,** who has been named to the newly created post of chief consulting structural engineer.

C. W. Henricks, New York district manager for the **Union Switch & Signal Division, Westinghouse Air Brake Co.,** has been named general sales manager at Pittsburgh. **J. W. Hansen,** manager advertising and publicity, has been named manager sales promotion and advertising. **H. A. Talbert,** assistant district manager at New York, has been appointed district manager at Pittsburgh. **M. R. Waller,** Pittsburgh district manager, has been named Chicago district manager. **T. B. Thompson,** Chicago district manager, has been named New York district manager.

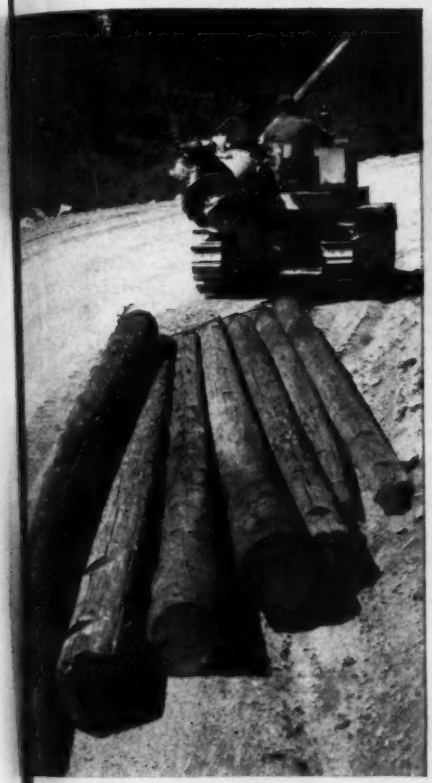
The **Bucyrus-Erie Company** has announced the appointment of **IMC Equipment, Inc.,** Atlanta, Ga., as distributor for its Hydrocrane in the state of Georgia.

H. C. Wallace, district manager of the **Air Reduction Sales Company's** Louisville, Ky., sales office, has been named assistant regional sales manager of the firm's Southern region at Louisville. **A. C. Pease,** assistant sales manager at Louisville, succeeds Mr. Wallace as district manager.

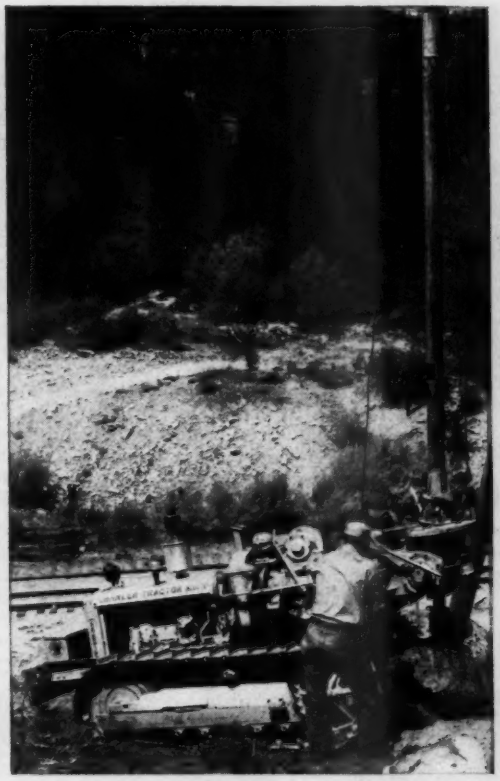


***Ralph D. Greer,* who has been appointed manager of sales, construction equipment division, of the *International Harvester Company*. Mr. Greer, formerly assistant manager of sales, succeeds *I. P. Payne,* who died January 14. *Leslie J. Lange,* general supervisor of sales development, has been named assistant manager of sales, succeeding Mr. Greer.**

HOW THE NORTHERN PACIFIC SETS 30 POLES A DAY WITH 8 MEN AND THIS D2



IT SKIDS



IT DRILLS

IT HOISTS

Eight men and a versatile CAT* D2 Tractor, equipped with an earth borer, can dig and set up to 30 telegraph poles a day for the Communications Department of the Northern Pacific Railway.

In this job, the crew is relocating 7,200 feet of telephone and telegraph line on the Continental Divide near Butte. It called for setting 48 poles — 25 to 40 feet long — in hard packed decomposed granite, at an elevation of 6,330 feet. First the D2 was used to skid the poles 600 yards from the unloading point. Then it powered the auger to drill 6-foot holes in the rocky ground in 10 minutes. Finally it was used to hoist the poles.

The tough little D2 is one of your most efficient off-track units. It was engineered to give you top performance on every job, in any climate, at any elevation. For instance, no matter where you are, you can always be sure that the D2 will start when you need it because it has the exclusive Caterpillar all-weather starting engine.

And now you can order the D2 equipped with the new Caterpillar field-tested oil clutch. If your jobs are tough on tractor flywheel clutches, you'll find the new clutch increases dependability and reduces service and maintenance costs.

The D2 is a maneuverable, dependable unit that can be used in practically all of your off-track work. And your Caterpillar Dealer — who specializes in fast, 24-hour service — will carry your parts inventory. Call him today for a demonstration of what the D2 can do on *your* off-track jobs.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

WANTED—
THE HARD WORK

Supply Trade News (Cont'd)

Edwin E. Webster has been appointed head of the order department of the **L. B. Foster Company's** office at Atlanta, Ga. **William B. Hundley, Jr.** has joined the firm's sales force—also at Atlanta.

H. T. Ross, manager of engineering of the **Linde Air Products Company,** division of **Union Carbide and Carbon Corp.,** has been named vice-president—engineering with headquarters at New York.

A. J. Reading and **W. S. Meyer** recently joined the Transportation Division of **National Aluminate Corporation.** They will both operate out of Chicago in sales and service capacities on Nalco weed and brush control chemicals. Mr. Reading has been connected with the railroad industry for some 30 years, and for the last decade has been directly concerned with all phases of weed and brush control. He is president of the Track Supply Association. Mr. Meyer has been active in weed and brush control work since 1940.

Obituary

Edward F. Schermerhorn, who retired in 1954 as manager of the insulated joint department of the Rail Joint Company, division of Poor & Co., died recently.

Helps From Manufacturers

The following compilation of literature —including pamphlets and data sheets —is offered free to railroad men by manufacturers to the railroad industry. To receive the desired information, write direct to the manufacturer.

VALVES. A new, 16-page technical bulletin, designated W-5, has recently been made available explaining the features of the manufacturer's cushioned float valves. Parts lists, dimensions, approximate shipping weights for the various sizes, operation, installation and other information on each of the various types of valves is contained in the catalog. (Write: *Golden-Anderson Valve Specialty Company, Dept. RTS, 1246 Ridge Ave., Pittsburgh 33, Pa.*)

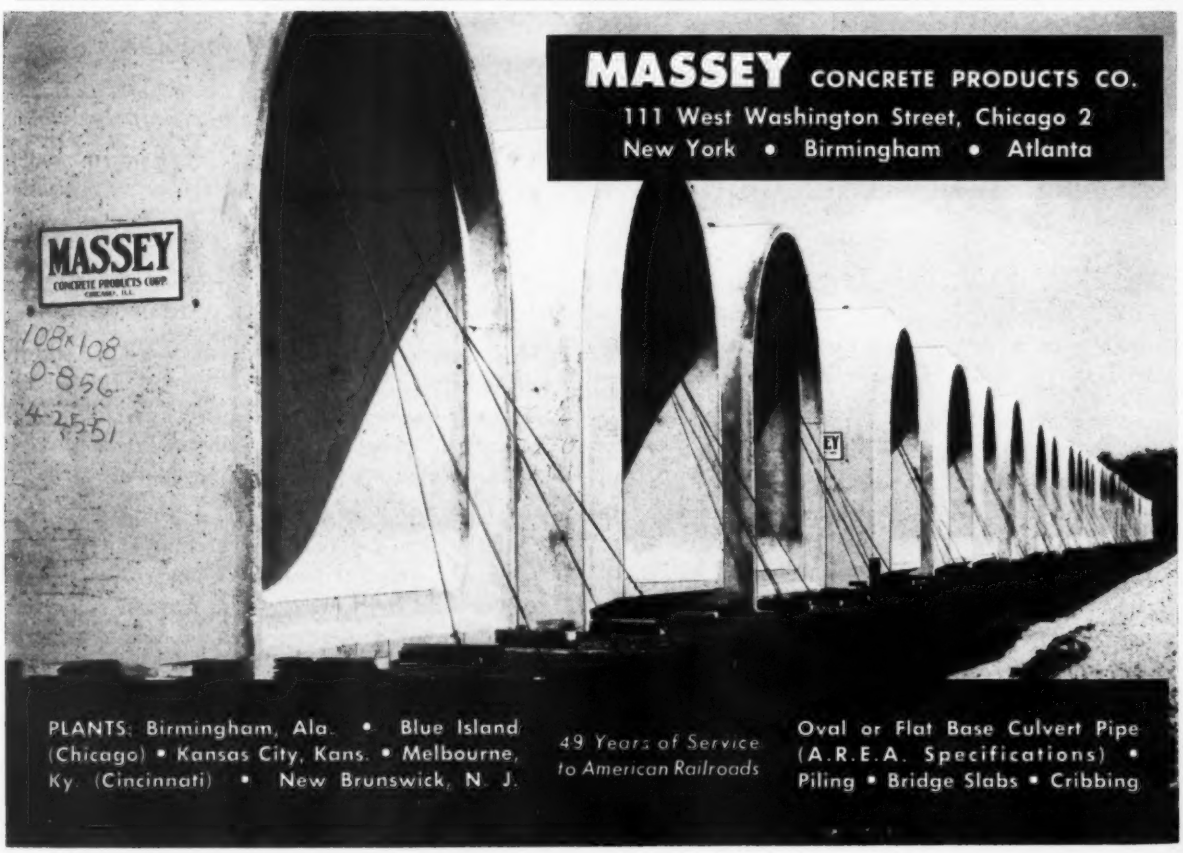
MATERIAL HANDLING. A new, 24-page illustrated bulletin on the manufacturer's "Dumptor" has been made available containing on-the-job photos, schematic drawings and descriptive text. (Write: *Koehring Company, Dept. RTS, Milwaukee 16, Wis.*)

SCRAPERS. Design, engineering, construction and operating features of the manufacturer's TS-360, 20-cu yd motor scraper are described in a new 16-page catalog, designated MS-1104, now available. Pictures and illustrations augment the text in the two-color catalog. (Write: *Allis-Chalmers Manufacturing Co., Construction Machinery Division, Dept. RTS, Milwaukee, Wis.*)

PILE DRIVERS. A new brochure—designated Bulletin No. 90—has just been issued by the manufacturer, describing a new, self-contained revolving diesel locomotive pile driver. The new brochure gives general operational capacities as well as facilities and abilities of the new machines. Also described is the manufacturer's combination locomotive crane and pile driver. (Write: *Orton Crane & Shovel Co., Dept. RTS, 608 S. Dearborn St., Chicago.*)

TRACTORS. A new, two-color brochure has recently been made available describing the manufacturer's D2, D4 and D6 crawler tractors. The brochure contains action photographs showing the tractors at work in various industries. Also included are descriptions and cutaway illustrations of the tractors' oil clutches and heavy undercarriages. Specifications are given along with a description of the ripper accessory available for these units. (Write: *Caterpillar Tractor Company, Dept. RTS, Peoria, Ill.*)

CONSTRUCTION EQUIPMENT. A six-page, two-color pamphlet has recently been made available enumerating the manufacturer's line of construction equipment. The brochure is profusely


MASSEY CONCRETE PRODUCTS CO.
111 West Washington Street, Chicago 2
New York • Birmingham • Atlanta
MASSEY
CONCRETE PRODUCTS CORP.
PLANTS: Birmingham, Ala. • Blue Island (Chicago) • Kansas City, Kans. • Melbourne, Ky. (Cincinnati) • New Brunswick, N. J.
49 Years of Service to American Railroads
Oval or Flat Base Culvert Pipe (A.R.E.A. Specifications) • Piling • Bridge Slabs • Cribbing

Use Q and C Step Joints For Dependable Service

Over a period of more than 40 years the manufacturer of Q & C Step Joints has kept pace with the best practice for producing high-grade heat treated steel Compromise Joints that will resist the impacts of heavy service.

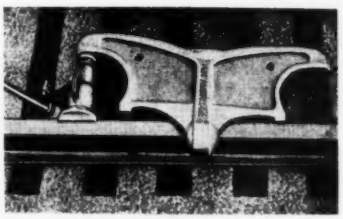
Q & C Step Joints are available for all the new sections of rail. Allowance for wear on old rails can be made to provide a smooth riding surface.

Ask for Q & C Step Joints on your requisitions.

THE Q AND C CO.

59 E. Van Buren St. Chicago 5 | 90 West St. New York 6 | 611 Olive St. St. Louis 1

Our 71st year in the development of worthwhile track appliances

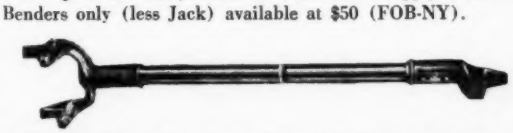


Now... Save $80

$120 Each

FOB New York

BRAND NEW ALDON RAIL BENDERS COMPLETE WITH 35-TON JACK. These hydra-jak rail benders are easy to attach, simple to use. Bender works either side of rail, jack either side of fulcrum. Powered by reversible SIMPLEX ball bearing screw jack. Automatic self-centering of plunger guarantees perfect alignment between rail and bender arm. Here's a product at a price we honestly believe you'll never find duplicated. But you'll have to act fast! Supply is limited. Benders only (less Jack) available at $50 (FOB-NY).



NEW TUBULAR ALL-STEEL TRACK GAUGES $5.50 (FOB-NY). Sturdy, insulated. Wearing parts recessed to gauge over burred rails. Built to AREA specifications 20-50.

ORDER TODAY!

INTEGRITY TOOL AND EQUIPMENT CO.

225 Lafayette Street • New York 12, N. Y. • CAnal 6-6753

. . . mechanical work horse for propelling the DUN-RITE® Gaging Machine and Pregager

The Dun-Rite BRONCO, Nordberg's newest money-saving *"Mechanical Muscle,"* is now available to all users of Dun-Rite Gaging equipment. Without the BRONCO, one man pushes the Pregager and a minimum of two men push the Dun-Rite . . . the BRONCO, manned by one operator, replaces these three men . . . stepping up the speed and efficiency of the entire gaging operation.

A uniquely designed single tread crawler tractor, the "Bronco" rides on the tie ends just outside the rail in track. It can be easily used with all Dun-Rite Gaging Machines now in service.

For complete details on this latest Nordberg time and money saving machine, mail the coupon today.

NORDBERG MFG. CO., Milwaukee, Wisconsin

MAIL COUPON TODAY

Nordberg Mfg. Co., Milwaukee, Wis. RT
Send copy of the new "Bronco" Bulletin 269 to:

Name_____

Railroad_____

Address_____

City_____ Zone____ State_____

© 1957, Nordberg Mfg. Co. R257½

Lines 1000 to 2000 Feet of Track per Hour!

R·M·C·

WHEEL-MOUNTED LINE Master

Using only an operator and one man for sighting, LineMaster provides outstanding maintenance economies. With lining head anchored to roadbed by a power-driven spud inserted in the crib, hydraulic cylinders under precise control of the operator move track in either direction. Available in wheel-mounted and crawler-mounted types.

Railway Maintenance Corporation

BOX 1888, PITTSBURGH 30, PA.

Manufacturers' Helps (Cont'd)

illustrated with action photographs of Austin-Western, Lima, and Madsen equipment. The last page of the pamphlet contains a listing of 133 products which are built by the manufacturer. (Write: *Baldwin-Lima-Hamilton Corporation, Dept. RTS, Philadelphia, Pa.*)

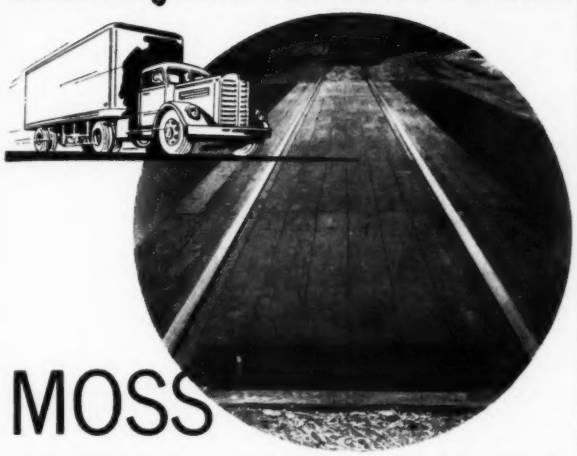
WATERPROOFING. An 8-page, 2-color brochure has recently been issued by the manufacturer describing the "Glasfab" membrane waterproofing system. The literature tells the purpose of a reinforcing membrane in below-grade waterproofing work and also gives job history reports of field applications. It also contains detailed specifications on both hot and cold process methods of application. (Write: *Twinsburg-Miller Corporation, Dept. RTS, Twinsburg, Ohio.*)

OPERATOR'S GUIDE. A new Traxcavator operator's guide has just been published by the manufacturer, presenting basic information on the operation of traxcavators and the jobs they can do. The illustrated, four-color booklet describes how to get the most work out of a Traxcavator with the least amount of effort. The booklet pictures the operating components found on all three models. Step by step each phase of the complete operating cycle is explained in detail and special emphasis is placed on the bucket indicator, a device which enables the operator to keep control of the bucket position. The guide illustrates the use of attachments which increase the machine's versatility and presents instructions for towing scrapers, ripping, and for using straight and angling bulldozers, log and lumberforks, quarry buckets, skeleton rock buckets, light material buckets and root and rock rakes. (Write: *Caterpillar Tractor Co., Dept. RTS, Peoria, Ill.*

EARTHMOVING. Three new pieces of literature have been made available by the manufacturer discussing the usage of the HD-11G and the HD-6G diesel-powered crawler-shovels. Also described are the four pull-type scrapers in the manufacturer's machinery line. The equipment covered in the literature is illustrated both through line drawings depicting them in action and with catalog-type illustrations. (Write: *Allis-Chalmers Manufacturing Company, Tractor Group, Dept. RTS, Milwaukee, Wis.*)

AIR TOOLS. A new 84-page illustrated catalog of air tools has been published by the manufacturer. The second edition of the No. 53 catalog contains complete descriptions and specifications of all of the manufacturer's air tools. The basic tools, with thousands of model variations, accessories and adapters are described. The catalog also stresses the interchangeability of parts for many tools, and devotes brief sections to contractors' air tools, high-frequency electric and universal electric tools and other products of the manufacturer's Construction Equipment division. (Write: *Thor Power Tool Company, Dept. RTS, Aurora, Ill.*)

Something New Has Been Added...



MOSS

PRESSURE TREATED CROSSINGS

4 Through Bolts Instead of 3 in the Assembled Slab Mean

- **GREATER STABILITY**
- **LONGER LIFE**
- **SMOOTHER RIDING**

It's the latest development in Moss' continuing search for ways to provide stronger, smoother and more durable railroad grade crossings. And that's not all. Moss through bolts are now provided with lock nuts that can't shake loose, even under continuous heavy traffic.

More reasons why Moss Crossings are your best investment!

VERSATILE:
Pre-framed for single or multiple, tangent or curved track. Adapted to crossing through railroad turnouts. Suitable for crossings at any angle with track.

DURABLE:
Built of tough, pressure-creosoted black gum, highly resistant to shock and abrasion, with interlocking grain that gives extra resistance to wear. Many have given 15 and more years of smooth, trouble-free service.

EASY TO INSTALL:
Timbers are cut and fitted to your specifications. Can be installed by a small track gang with regular tools. Easy to move from one location to another.

FOR CROSSINGS THAT LAST AND LAST— INSIST ON MOSS CREOSOTED TIMBER CROSSINGS

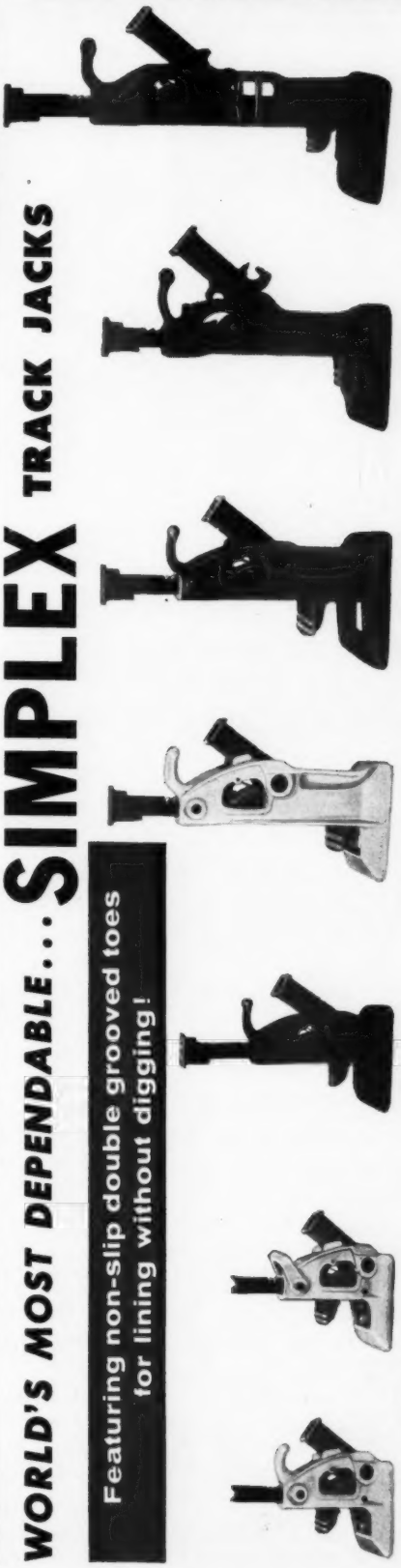
WRITE TODAY FOR FREE BULLETIN

T. J. MOSS TIE COMPANY
700 SECURITY BUILDING • ST. LOUIS 2, MISSOURI
CROSS TIES • SWITCH TIES • POLES AND POSTS • PILING • CROSSINGS
WOOD PRESERVING PLANTS: E. St. Louis, Ill.—Granville, Wis.—Shreveport, La.—Columbus, Miss.

GET IN THE GROOVE!

WORLD'S MOST DEPENDABLE... SIMPLEX TRACK JACKS

Featuring non-slip double grooved toes for lining without digging!



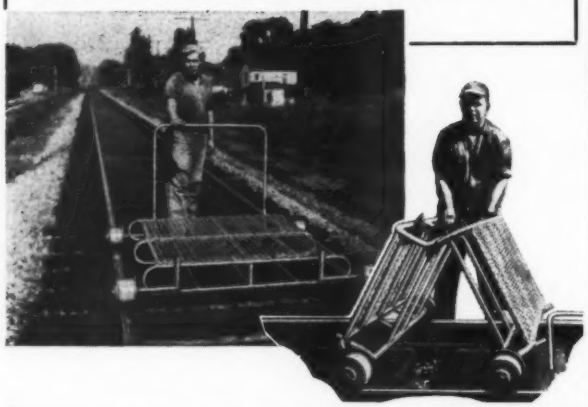
- Most complete line — twelve models
- Available with malleable or aluminum alloy housings
- Large area (2½" x 3¼") lifting toe has non-slip grooves
- Lifting ranges from 5 inches to 19¼ inches
- Thumb guards and trips on both sides
- Lowest toe height—less digging or pounding to set jack

WORLD'S LARGEST MFGRS. OF INDUSTRIAL MECHANICAL AND HYDRAULIC JACKS

SIMPLEX JACKS

TEMPLETON, KENLY & CO. • 2543 GARDNER RD. • BROADVIEW, ILLINOIS

New! NOLAN TOOL AND SUPPLY CAR



This efficient car is of all-tubular high-carbon steel construction, and designed to safely carry heavy loads of ties, rails, supplies and tools. 2000 lbs. capacity.

The car breaks conveniently in the center into two sections for easy handling and transportation. Easily and quickly unhooked or hooked together. Each section can be used for a truck seat.

The deck is heavy mesh-expanded steel, which prevents slippage of loads. Removable handle can be used at either end. Easily pushed on ball bearing cast steel wheels. Platform size 48" x 45". Height above rail 8". Weight 140 lbs. complete—70 lbs. per section. List $142.50. Order now!

Write for complete catalog of Nolan railroad equipment and supplies.

NOLAN

THE NOLAN COMPANY

166 Pennsylvania Street, BOWERSTON OHIO

NO SPLITTING OR TURNING

Lewis sealtite hook bolts

Lewis Sealtite hook bolts for bridge and trestle construction have patented fins to grip wood, without wedging, splitting or turning. Sealtite washer nut stops seepage . . retards corrosion and wood deterioration. Available in Hot-Dip Galvanized finish for greater durability and economy, in black for low original cost. Also furnished with std. sq. and hex. nuts.

Lewis Sealtite products are used by 85 per cent of America's Class 1 Railroads. All are made in the U.S.A. to A.S.T.M. specifications.

Write, call or wire for samples and prices.

Lewis BOLT & NUT COMPANY
504 Malcolm Ave. S. E.
MINNEAPOLIS 14, MINNESOTA

LOOK FOR THIS STAMP OF U QUALITY

Advertisers IN THIS ISSUE

A

Allis-Chalmers Mfg. Company, Construction Machinery Div. 38
American Creosoting Corporation ... 17
Armco Drainage & Metal Products, Inc. 29

B

Bernuth, Lembcke Company, Inc. .. 68
Bethlehem Steel Company 3
Bird & Son, Inc. 33
Bogle, R. H., Company 12

C

Caterpillar Tractor Co. Inside Back Cover, 79
Chipman Chemical Company 32
Columbia-Geneva Steel Division, U. S. Steel Corp. 9
Continental Motors Corporation 70
Cullen-Friestedt Company 16

D

Dearborn Chemical Company 77
DuPont, E. I., de Nemours & Co., Inc., Grasselli Chemicals Department .. 73

E

Esso Standard Oil Company 7

F

Fairmont Railway Motors, Inc. 36
Foster, L. B., Company 64

G

General Chemical Division, Allied Chemical & Dye Corp. 21
Gravely Tractors, Inc. 72

H

Harnischfeger Corporation, Construction and Mining Division 35
Homelite Corporation 4
Hough, Frank G., Company 75
Huber-Warco Company 22
Hyster Corporation 26

I

Integrity Tool & Equipment Co. 81

J

Jackson Vibrators, Incorporated 25

K

Kaiser Aluminum and Chemical Sales, Inc. 10
Kasle Steel Corporation 72
Kershaw Manufacturing Company, Inc. ..... Inside Front Cover
Koehring Company 31

L

LeTourneau-Westinghouse Company 61, 71
Lewis Bolt & Nut Company 84
Linde Air Products Company, Railroad Department, A Division of Union Carbide & Carbon Corp. .. 24

M

Mannix International Inc. 20
Maintenance Equipment Company .. 11
Massey Products Company 80
Matisa Equipment Corp. 14
Mid-West Forging & Manufacturing Company 13
Monsanto Chemical Company 59
Moss Tie Company, T. J. 83

N

National Aluminate Corporation 5
National Lock Washer Company Front Cover
Nolan Company 84
Nordberg Manufacturing Company 19, 81

O

Onan & Sons, Inc., D. W. 74
Orton Crane & Shovel Co. 23
Osmose Wood Preserving Company .. 74

P

Portland Cement Association 18

Q

Q & C Company, The 81

R

Railway Maintenance Corporation .. 82

S

Schield Bantam Company 76
Speno, Frank, Railroad Ballast Cleaning Co., Inc. 8

T

Templeton, Kenly & Company 83
Tennessee Coal & Iron Division, U. S. Steel Corp. 9
Texas Company ..... Back Cover
Thomas Industries Inc., Wright Power Saw Division 69
True Temper, Railway Appliance Division 65

U

Union Metal Manufacturing Company 30
United States Borax & Chemical Corporation, Pacific Coast Borax Company Division 67
United States Envelope Co. 6
United States Steel Corporation 9
United States Steel Export Company 9

W

Warner & Swasey, Gradall Division .. 63
Western Railroad Supply Company .. 27
Woolery Machine Company 28
Wright Power Saw, Division of Thomas Industries, Inc. 69

"This index is an editorial feature, maintained for the convenience of readers. It is not a part of the advertiser's contract and Railway Track & Structures assumes no responsibility for its correctness."

TO SPEED THIS OFF-TRACK JOB, ATLANTIC COAST LINE CALLS ON A NO. 12

For a 3½-mile job near Hatley, Ga., Atlantic Coast Line has four Caterpillar machines at work. As usual, one of them is a big Cat* No. 12 Motor Grader.

It's the all-around work capacity of this big yellow machine that makes it so valuable to railroads for off-track production. You'll have a hard time finding a job that the No. 12 cannot handle. For instance, it can be used to shape embankment, eliminate irregular fills, control weeds and brush, police the yard, clean side ditches and clear snow. And railroad men are continually discovering other specialized off-track uses for this unit.

But its production is as important as its versatility. Today the No. 12 packs more power than ever—115 HP— and has faster reverse speeds. An exclusive Caterpillar oil clutch gives you more efficiency and economy. Maintenance is reduced and no external lubrication is required. In addition, new tubeless tires are available at *no extra cost*. They eliminate an estimated 80% of down time caused by tires.

Each of these design advances assures you of still greater productivity, lower costs and longer work life. Your Caterpillar Dealer—who specializes in fast, efficient service and maintains a complete inventory of parts for you—is ready to demonstrate three sizes of versatile Cat Motor Graders on *your* job. Just give him a ring and name the date.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

WANTED—
THE HARD WORK

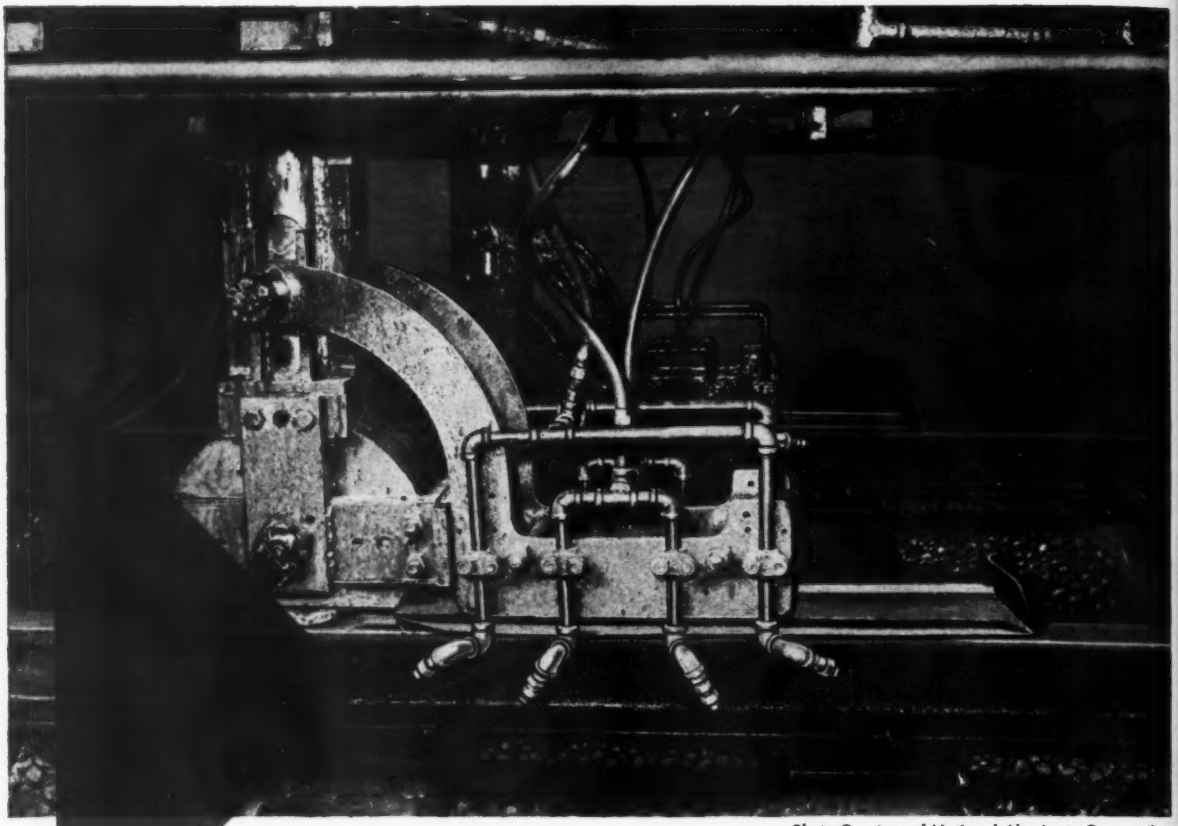


Photo Courtesy of National Aluminate Corporation

Texaco Metal Preservative penetrates moisture and dirt—then adheres to the rail

If weather were the only culprit in shortening a rail's life, almost any metal preservative would do.

Flying ballast, vibration, heat and cold; or, for that matter, anything that breaks the preservative's seal is the thing that opens your rails wide to rust and corrosion.

Texaco Metal Preservative—formulated to penetrate and adhere, even through dirt—seals rust and corrosion out. It sprays on easily, spreads evenly and gives longer-lasting protection. Another advantage is that it can be sprayed on during the early morning hours when rail is so often wet; you don't have to wait for conditions to be "right."

National Aluminate Corporation uses Texaco Metal Preservatives extensively for protective coatings applied with its specially equipped railcoating cars.

Their Spray Services Department reports:

"Applying Texaco Metal Preservatives with Nalco's precision type spray equipment has proved highly satisfactory. The combination of an excellent corrosion inhibitor plus carefully engineered application equipment makes rail protection longer-lasting, more effective and more economical than ever before."

A Texaco railway engineer will be glad to show you the advantages of *Texaco Metal Preservative*. Just call the nearest Railway Sales Office in New York, Chicago, San Francisco, St. Paul, St. Louis or Atlanta.

The Texas Company, *Railway Sales Division,* 135 East 42nd Street, New York 17, N.Y.

TEXACO

TEXACO Railroad Lubricants

AND SYSTEMATIC ENGINEERING SERVICE

IN ALL 48 STATES